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## Original Contributions.

### ANATOMY: A CRITIQUE.

BY WM. ERNEST WALKER, D.D.S., PASS CHRISTIAN, MISS. ABSTRACT OF  
A PAPER READ BEFORE THE NATIONAL DENTAL ASSOCIATION,  
AT OMAHA, AUG. 30-SEPT. 1, 1898.

The improvement in the section on the Mouth and Teeth in the 1897 edition of Gray's Anatomy over any previous edition is very marked and in many respects is thoroughly up to date. A few errors have crept in, however, to which I desire to call attention, not only that correction may be made in the next edition, but that students may avoid the error of adopting as fact the statements which I point out as incorrect.

On page 932 of the volume under consideration the names of the surfaces of the teeth are given with definitions, as labial, lingual, buccal, distal, proximal, the definition of *proximal* being: "That surface toward the mesial line," proximal being used as the reverse of *distal*, the latter being defined as "that (surface) away from the same" (that is from the mesial line).

Both of these definitions are misleading. No definition of mesial having been given, the student turns to his dictionaries for light. In Gould's Dictionary of Medicine he reads, "mesial, same as median." Turning to *median* he reads "middle, meson or mesial" with reference to "M. line." Turning to *line* he finds a table appended in which "median line" is defined as a "line joining any two points at the periphery of the meson or medium plane of the body."

Referring to *plane* he finds "medial, median and mesial plane; a plane generally antero-posterior, dividing a body into two symmetrical halves." Accepting this definition and applying it to the mouth, the mesial line or plane is one tangent to the centre of the roof of the mouth passing antero-posteriorly between the superior centrals (providing of course that they are normally placed). From this definition then, together with the definition of proximal given

on page 932—"toward the mesial line"—he would naturally conclude that the proximal surface of the molars and bicuspid must be the surface facing the median line, which in the mouth runs parallel with the sides of the tongue. This certainly was not the idea intended to be conveyed.

The conclusion thus arising might have been avoided by adopting the definitions of Dr. G. V. Black, found in the 1895 transactions of the American Dental Association as follows: "Distal—away from the median line of the face, following the curve of the dental arch." "Proximate (proximal would seem to be preferred, as its termination harmonizes with mesial, distal, incisal, etc.) applied to a surface of a tooth (either distal or mesial) which is next to another tooth." "Mesial, towards the median line of the face, following the curve of the dental arch." The mesial surface, however, is not included in the list of tooth surfaces given, proximal being evidently intended to indicate the reverse of distal, the former being described as toward the latter, away from the mesial line. In the text, however, except in the definitions, proximal is not used as the name of a tooth surface, mesial being substituted, although nowhere defined. For instance, on page 933 we read, "The mesial and distal surfaces are triangular;" "short mesial" and "long distal" cutting edges; "they are flattened mesially and distally," etc.

The *mesial* and *distal* are used in conformity with the definitions formulated by Dr. Black, and it is to be regretted that the definition of *proximal* was not also in harmony with his nomenclature.

On page 933 the cuspids are spoken of as *canines*, a term which the common nomenclature of the A. D. A. agreed should be discontinued, together with wisdom teeth, six-year molars, etc. A slight error occurs on this page in these words, "the concave labial surface is marked by three ridges uniting in a basal ridge." Undoubtedly the *lingual* surface is here intended.

On page 935 we read as follows: "The movement of the human mandible is forward and downward, the resultant of these directions being an oblique line, upon an average of 35 degrees from the horizontal plane." Reference being made to a footnote reading, "W. E. Walker, *Dental Cosmos*, 1896," I feel at liberty to make the following remarks: For "mandible" read "mandibular canydes;" for "35 degrees from the horizontal plane" read "40 degrees from the facial line." There can be no angle from the horizontal plane, as

there is no horizontal plane in the head. The plane of condyle movement forms an angle of 35 degrees (average) with the plane of occlusion, which, however, is not a horizontal plane; but if we suppose the facial line to be placed vertically, then of course a line perpendicular to this would be horizontal. In such a case we would find the plane of occlusion forming an average angle of 15 degrees to this imaginary horizontal plane, which, however, would form with the plane of condyle movement an average angle of 50 degrees instead of 35 degrees as stated in the text.

The text continues, "When the lower jaw is advanced until the cutting edges are in contact the jaws are separated, but as the highest part of the lower arch—its third molar—advances it meets and rests upon a higher point, second molar of the upper arch, and thus undue strain of the incisors is obviated." A similar statement is made by Bodecker in his "Anatomy and Pathology of the Teeth," but my studies of the articulation and occlusion of the human teeth having convinced me that it was an error, I expressed that view in a discussion of the Chairman's Address in the Dental and Oral Section (now the Section on Stomatology) of the American Medical Association in 1896. Finding this statement reiterated in the present edition of Gray, I concluded to investigate the matter more closely. I therefore went to the college laboratory and made casts of the students' mouths, taking them as they came, all that I could get, until the number reached 33, rejecting only those mouths in which very many teeth had been extracted, which could of course show nothing on this point. These were not selected cases, for I took them exactly as they ran, proceeding as follows: A roll of soft modeling composition was placed on the lower teeth and the student instructed to bite on his incisors, bringing the mesial surfaces squarely together. The upper and lower impressions were then filled, the plaster coming in contact posterior to the teeth, thus making a so-called plaster articulator. The impression material was then removed, and the relation which the upper and lower teeth bore to one another was readily seen. As each bite-impression was taken and the cast made it was marked with a number and the number entered on a list with the name and age of the student. I have this list with me and shall be pleased to answer any questions in regard to the physique or physiognomy of these subjects.

I also present the casts for your inspection. Of the thirty-three

it will be seen that twenty-two have the molars entirely free when the incisors are placed end to end, though in two of these cases they do nearly touch. Of the others seven are excluded because of abnormality, the incisors meeting end to end at all times, there being no overbite in occlusion and no *shearing* motion. I was surprised to find so many having this peculiarity. Of the thirty-three only three have actual contact of the molars in such manner as to balance the incisors in biting, according to Bodecker, and Gray, 1897 edition. These cases, however, prove the exception rather than the rule. Of one of these cases it must be remarked there is contact of the molars only on the right side, where the lower second and third molars have come forward, due to the loss of the first molar. There is no contact on the left side. The second case has lost the left upper second bicuspid and lower left first molar; also lower right second bicuspid and first molar. The third of the contact cases has no bicuspids and only one molar on the left lower side, and shows great wear of the incisors. This is also shown in the normally occluded casts of the same mouth. Contact in this case is between the right lower second and upper first bicuspids and left lower second and upper first molar. The abrasion is so extreme as to permit of placing the incisors on end on opening the jaw but very slightly. I think you will therefore admit that the statement referred to is fairly disproved by this collection of casts.

I have also with me casts of three unusually symmetrical mouths, having casts in each case showing the perfect occlusion as well as the biting position. You will note that these three cases also fully support my position. I think it will be found that the *balancing contact* does not occur any more frequently in the lateral positions of the jaw than in the forward position, but this I have not proven so positively, not having taken the *grinding* impression of a sufficient number of cases to establish a rule.

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The foregoing was written early this spring, since which time Dr. H. H. Burchard's Dental Pathology has been established. I note on page 178 the statement again appears, this being the third time it has been given place in our text-books; first by Dr. Bodecker, and both second and third by Dr. Burchard, it being remembered that the portion of Gray's Anatomy in which the statement appears was edited by Dr. Burchard. As stated in his recent work



on dental pathology we read: "In the act of incising food the jaws are first separated and the lower jaw advanced until the cutting edges of the upper and lower incisors are opposite one another. While the jaws are in position with the incisors in occlusal contact they do not bear alone the stress of whatever muscular force is applied, but it will be seen that the distal cusps of the third molars, the highest points of the dental arch, advance and meet the distal cusps of the upper second molars, highest points of the dental arch, so that when the incisors are in edge-to-edge occlusion, although all of the other teeth are separated to an extent governed by the overbite, the dental arch is supported posteriorly by contact of the last molars, thus preventing undue stress upon the incisors."

In addition to the bite-impressions which I have taken to ascertain the fact on this point I have questioned a great many individuals as to whether their molars touch at the same time with the incisors when the latter are in the edge-to-edge position, the answer being almost invariably in the negative.

I can conceive of only one way in which this erroneous statement can have originated, and that is in Dr. Bodecker's having been misled by Dr. Bonwill's advice to construct artificial dentures with what he calls a "balancing articulation," so that the molars will touch at the same time that the incisors meet edge to edge, and also so that there will be contact when the jaw is thrown to one side, but also on the side that is not in use, in order to support the plate and avoid its displacement in mastication. But nowhere in Dr. Bonwill's published writings that I have seen has he claimed for natural teeth this balancing provision for contact of the molars when the incisors are in the edge-to-edge or biting position.

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## MATERIA MEDICA AND THERAPEUTICS.

BY J. S. CASSIDY, D.D.S., COVINGTON, KY. ABSTRACT OF A PAPER READ  
BEFORE THE NATIONAL DENTAL ASSOCIATION, AT OMAHA,  
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There have been no conspicuous discoveries in dental materia medica since the last meeting of the American Dental Association. A few preparations of correct formulæ, mainly of antiseptic quality, have been introduced, but the deluge of drugs of this kind, intended for application in dental practice, following the acceptance of the bacterial genesis of many oral diseases, has culminated in a

strong tendency to ignore the very new remedies, and on the other hand to investigate more thoroughly the virtues of those that have been already more or less known. There are several reasons why we are disposed thus to resume more intimate relations with the older drugs. Aside from some objectionable properties they are comparatively simple in their chemical and therapeutic action, time-tried and reliable, non-secret, and most not even proprietary.

Formaldehyd ( $\text{CH}_2\text{O}$ ) holds a similar questionable position in the estimation of a few authorities in our profession, although its respectability is as well known and unwittingly established as the active principle of the earth of ant-hills, which from time immemorial has been gathered by the people of continental Europe and used by them successfully as a local remedy in the domestic treatment of swellings, bruises, suppurating sores, abscesses, neuralgia, gouty and rheumatic pains, etc. This fact probably led to its introduction a few years ago to medical science in the forms in which we now receive it.

At a meeting at Old Point Comfort in 1894 the writer had the privilege of describing this compound to the American Dental Association. The claims made for it at that time as a *combined* disinfectant, antiseptic and germicide have been found by careful investigation to be based on solid truth; at the same time we should remember that its irritant properties, without a corrective, render it rather unpleasant to use in the mouth. Some writers in the journals report cases of serious sloughing of the gums caused by formalin, even when diluted. Such accusations surely must have their influences in overcoming the good reputation it has acquired in other hands, and although some of us must confess to having had none other than beneficial results by its use in all sorts of suitable cases, now that positive evidence has been submitted by reputable gentlemen of the injurious effects produced in the mouth by this agent, we shall probably be less free with it than heretofore, for all our medicaments should be like Cæsar's wife, "above suspicion." In order, however, to give the deserving a portion of its due, permit us to say that if extracted teeth intended for diagram work by the classes in our colleges be kept over night in a 5-per-cent solution of formalin they will thereby be completely sterilized; and further, inasmuch as there is no method known which will destroy infectious matter on steel instruments in less than ten minutes with-

out injuring them, which is too long a time for Patience to stand around smiling at Grief, we need something harmless and immediately effective, and if burs, excavators, etc., after cleansing be dipped in full strength formalin, wiped dry and scented with whatever you please, they will be more thoroughly and safely sterilized than by any other conveniently available means; furthermore, the formalin can be used repeatedly in this way.

Dr. Edwards of Oakland, Cal., assured the writer that 25 per cent of formalin will prevent mercury from attacking gold.

The latest phase of cataphoresis is the laudable effort of writers in journals to instruct us in the definite rules of electrolysis. Although it is rather ancient history, as may be seen by reference to the reports by this section (*Materia Medica and Therapeutics*) to the A. D. A. in 1896 and 1897, we may be pardoned for introducing here, merely however as a suggestion, a brief list of cataphoretics employed in dentistry, with their active principles so arranged that the proper pole to be used in connection with them may be easily selected:

<i>Negative.</i>			<i>Positive.</i>		
Hydrogen Dioxid	H <sub>2</sub> O	O	Ag.	NO <sub>3</sub>	Silver Nitrate.
(Pyrozone)					
Potassium Iodid	K	I	C <sub>17</sub> H <sub>21</sub> NO <sub>4</sub>	H Cl	Cocain Hydrochlorid and other alkaloids such as
Sod. Hypochlorite	Na	Clo	C <sub>17</sub> H <sub>19</sub> NO <sub>3</sub>	H <sub>2</sub> S O <sub>4</sub>	Morph. Sulfate.
(Electrozone)					

The vertical lines show simply the separation of the ions by the current and the direction those needed desire to travel. Thus, negative O, I, and Clo go toward the positive pole, while the positive basic principles like silver, cocain and other bases as compared with acids go toward the negative pole. The pole to use, therefore, is the same in name as the active penetrating principle of the drug employed, for, as we know, like repels like and opposites attract.

In regard to the question as to whether "nonconductors, like alcohol, chloroform, phenol, tinct. iodine, etc., either single or mixed, can be used successfully in cataphoresis," I am inclined to answer in the affirmative. We must remember that the current is conducted by the tissues from pole to pole, independently of such substances, and owing to the pressure of the current itself (and H is the positive pole to be applied), they can be induced to penetrate farther than by mere absorption.

Chemico-metallic processes intended for the filling of tortuous root-canals are worthy innovations on the older methods. The interaction between the acid Dr. Weld uses (modified nitrohydrochloric) and his pin alloy, composed mainly of zinc with some silver and tin also, results in the production of compounds, the virtues of which are strongly indicated in such positions. Nitrosyl ( $\text{NO Cl}$ ), an unstable disinfecting gas, and zinc oxychlorid ( $\text{ZnO}$ ,  $\text{ZnCl}_2$ ) are the principal bodies and formed together with some silver oxid ( $\text{Ag}_2\text{O}$ ) and stannic chlorid ( $\text{SnCl}_4$ ).

In the June number of the *Dental Cosmos*, page 497, appears an article from the *Journal of the British Dental Association*, reported by H. Bellamy Gardner, which deserves some criticism at our hands, inasmuch as it positively contradicts a statement made by the writer in an address to the A. D. A. last year. The article in question gives in detail a series of experiments on  $\text{N}_2\text{O}$  by Drs. Kemp and Brush, to "prove its specific anesthetic influence as distinct from any inert gas," like N. Dr. Brush was "convinced that  $\text{N}_2\text{O}$  does not produce its influence simply by depriving the patient of oxygen," and Dr. Kemp states that "he was unable to obtain a compound of  $\text{N}_2\text{O}$  with the hæmoglobin of the blood." These conclusions we can safely endorse, but to another assertion by Dr. Kemp we must decidedly object. It is as follows: "With regard to the general metabolism, one result of these researches is to show positively that  $\text{CO}_2$  in the *arterial blood* (the italics are ours) is greatly diminished and is not increased, so that any theory involving the dependence of anesthesia on a retention of  $\text{CO}_2$  within the system is in opposition to the direct findings of the experiments." Now surely Dr. Kemp knows that  $\text{CO}_2$  does not escape from the body by means of the arteries. As well might he assert, so far as scientific deductions and historical facts are concerned, that he had searched the Great Salt Lake of Utah for evidence of the work done against Spain by Admiral Dewey and could find none, so Admiral Dewey is not entitled to the distinction of smashing the Spaniards in Manila harbor.

If Dr. Kemp will kindly examine anywhere on the venous side of the capillaries instead of on the arterial side, after giving his dog an average dose of  $\text{N}_2\text{O}$ , he will find strong evidence of accumulated  $\text{CO}_2$ .  $\text{N}_2\text{O}$  is rich in O, but it is a chemical compound, differing in this respect from either free O or the air we breathe. It forms no direct combination with any substance. It is active only by the O

it sets free to oxidizable bodies. With it and C, H, S, P, etc., the normal oxids of these elements are produced,  $\text{CO}_2$ ,  $\text{H}_2\text{O}$ ,  $\text{SO}_2$ ,  $\text{P}_2$ ,  $\text{O}_5$ , etc. These facts are easily proven by experiment.

It obeys the same rules governing its own chemical nature in the animal body as well as elsewhere. When inhaled it goes through the arterial circulation unchanged, superseding for the time being iron, the oxygen carrier of the body, and when the capillaries are reached it gives up its O to form the combinations with C, H, etc. that atmospheric O produces, but to a greater extent. The  $\text{CO}_2$  developed thus, in greater quantity than usual, cannot escape freely beyond the point of its development, for the simple reason that the reduction of the ferric oxid in the arterial blood is not accomplished, leaving the iron unprepared to convey the  $\text{CO}_2$ , as ferrous carbonate, to the lungs. If, however, either free oxygen or air be administered simultaneously, or at short intervals, one of the physiological functions of iron is restored sufficiently to prevent the cyanosis of  $\text{CO}_2$  congestion; and so, according to the case in hand, the animal may thus be kept indefinitely in the anesthetic condition without serious danger of death by asphyxiation.

### HEMORRHAGE FOLLOWING EXTRACTION OF TEETH, ITS ETIOLOGY AND TREATMENT.

BY H. PRINZ, D.D.S., ST. LOUIS. READ BEFORE THE MISSOURI STATE DENTAL ASSOCIATION, AT ST. LOUIS, JULY 5-8, 1898.

Hemorrhage after extraction of teeth has been so frequently the subject of lengthy discussions in dental societies that it might at first seem improper to bring it again before the profession. We read so much about new methods and remedies recommended for treatment in such complications, however, that if taken together with the older teachings and presented in concise form the title of this paper may be justified.

There are two fundamental factors which may be regarded as the causes of alveolar hemorrhage: One, organic fault of the patient; and two, mechanical accidents of the operation. Organic faults have their origin in an abnormal fluidity of the blood, or in a defective construction or morbid condition of the blood-vessels. Directly from the abnormal fluidity of the blood results a disease known as hæmophilia, in which the fibrin and all the plasma-forming constituents of the blood seem to be materially reduced, while

the aqueous portion, the liquor sanguinis, is greatly increased. Exudation of blood in the surrounding tissues of such persons happens very frequently: a slight slap, a little pressure of the garments, etc., may cause a profuse discharge beneath the skin.

The pathology of hemorrhagic diathesis is very little known. Virchow is of the opinion that an abnormal pressure of the circulation exists. The blood-vessels seem to be very thin, and apparently undergoing a fatty degeneration. The best ascertained cause of hæmophilia is hereditary predisposition, says Quain, and it is rather a peculiar circumstance in bleeders that the disease is generally transmitted to the males of the family, while the females have the greater capacity of conveying the anomaly to the offspring, the sufferer again being a male member.

In leukemia we are probably more able to give a plausible cause for extensive hemorrhage. This chronic disease might result from a large increase of the leucocytes in the blood, while the blood-making organs, the spleen and lymph glands, become swollen. Important changes occur in the bone-marrow, and in some cases it becomes of a greenish-yellow pus-like appearance, being infiltrated to some extent in the spongy part of the bone. Such cases are dangerous, usually ending in lethal exitus by profuse hemorrhage from the nose, per anum, etc.

Scurvy, as a result of an accumulation of saline material in the blood, increases the danger of hemorrhage. It is a disease more peculiar to the sailors of olden times. The salt-pork diet, together with extraordinary strain on the system, as for instance in arctic explorations, lowered the vitality, and in consequence the vessel-walls offered less resistance to osmotic diffusion of the saline blood.

Anemia, chlorosis, etc., in fact all diseases of the blood circulation materially increase the danger of hemorrhage. Attention has been called to the occurrence of violent hemorrhage as a result of extraction of teeth during menstruation; a condition which Hollaender calls vicarious hemorrhage. Salter describes two cases from his own practice. He extracted a lower molar from a woman of twenty, and the little hemorrhage soon stopped; but about ten hours later it commenced again very violently and lasted for two days. After application of hot sitz baths and purgatives the menses set in and hemorrhage from alveolus stopped. Ritter mentions a few similar instances, and Gutmann gives us an elaborate treatise referring to



four of his own cases. He concludes that the menses are of material influence upon the duration and strength of alveolar hemorrhage. Extraction of teeth is not an absolute contraindication during menstruation, but it is certainly advisable to delay the operation if possible. During pregnancy and lactation there probably need be no fear of increased bleeding, and I have been unable to find any reference to it in the literature.

Brain-workers, persons affected with plethora, chronic alcoholism, etc., may be subject to greater hemorrhage, and more so during the hot period of summer.

Defective contraction of the blood-vessels may also hinder the easy control of hemorrhage, for the newly-formed thrombus may be constantly washed away by the blood-stream, because the injured vessel walls will not contract. Such conditions are not numerous; anemic persons, habitual users of alcohol and syphilitics are found among its subjects.

Local causes of alveolar hemorrhage may be of accidental nature, such as fractures of the alveolar process, or as a result of major surgical interference, viz., by the use of the alveolar forceps or the chisel. But usually those cases yield quickly to treatment. Gaudier's tabulation of 212 cases of lethal hemorrhage developed the fact that in most cases where the extraction of a tooth was the cause it could be traced to the lower molars. A closer anatomical study of the mandibula by Hollaender made it clear that the roots of the lower molars terminate very near the inferior maxillary canal; in some instances they pass directly into it. The extraction of such a tooth will cause an almost uncontrollable hemorrhage, as the formation of a thrombus in the inframaxillary artery is very questionable. The same results may occur if accidentally an aneurism of the same artery happens to be too near the apices of the roots.

The treatment of hemorrhage by the dentist consists foremost in surgical and mechanical applications, although a knowledge of constitutional medication is desirable. Before we consider these methods closer, it might probably be of some interest to know what the older knights of the forceps employed in arresting bleeding from a tooth-socket. The oldest medical compendium so far known is the Papyrus Ebers, covering a period from 3700-1500 B. C. We find quite a number of remedies mentioned for application in dental disorders, but no direct allusion is made to hemorrhage. The

medicines employed were mostly of a semi-solid consistency, having honey or dough as a base, with which onions, olibanum, caraway-seed, verdigris, etc., were incorporated. Probably the Egyptian dentist used these for plugging the empty alveolus. During the Grecian and Roman period the teachings of Hippocrates, Celsus, Galen and others do not particularly mention treatment of hemorrhage after extraction, although they prescribed and used quite a number of astringent mouth-washes and pastes. It seems that they extracted only such teeth as were rather loosely attached, as the plumbum odontagogum, the lead forceps, would probably never lift a tightly implanted molar from the socket. Abulkasem, an Arabian surgeon living at the end of the tenth century in Cordova, Spain, gives in his book, the "Athasrif," a most excellent treatise on extracting teeth, together with elaborate illustrations of all the instruments employed, but very little is said about the treatment of hemorrhage. Ambroise Parre, the famous French surgeon of the sixteenth century, is the first one who tells us plainly to wash the wound after extraction, to compress the empty alveolus with the fingers, etc. It seems that the actual cautery was used in the mouth about this time. The older Foucon in France invented a little compressing apparatus for stopping alveolar hemorrhage, a probably necessary implement, as the key about this time came in general use, of which Holmes tells us, that while the bolt was turning the victim thought he was in that place where the man ought to be who invented this instrument of torture.

Jourdain used little balls of charpie soaked in Monsel's solution and plugged the alveolus tightly up to the gingival margin. The two great English surgeons, John Hunter and Bell, are among the first who employed a rational treatment for alveolar hemorrhage. Then came the father of modern dental surgery, John Tomes. He devoted a special chapter in his work, "A System of Dental Surgery," to the treatment of hemorrhage after extraction. He advocated matico leaves very highly. Let us hear what he had to say about them: "In the cases of alveolar hemorrhage which have come under my own care the bleeding has been speedily arrested by matico. \* \* \* The degree of success attendant on the use of the matico leaf will greatly depend on the care with which it is applied. \* \* \* The leaf should be rolled up and the rough side kept outward. The rolls are taken up in the plugging forceps

and passed firmly down to the bottom of the alveolus, the somewhat pointed end being introduced first." \* \* \* Tomes stated correctly that the degree of success depends more upon the care taken in this operation itself than upon the matico leaf, which has no hæmostatic properties and acts in a like manner to dental spunk.

The object sought for locally arresting alveolar hemorrhage is to aid the formation of a thrombus. The drugs employed therefore must possess astringent and coagulant properties. Amongst those used we name alum, tannic acid, iron in its various forms, notably persulphate or Monsel's powder, ferropyrin, styptic collodion, chromic acid, copper sulphate, chlorid of zinc, etc. For mechanical plugging of the alveolus, spunk, cotton, lint or gauze, cork, gutta-percha, plaster of paris, modeling compound, and even the extracted tooth itself are used, each operator having a preference for some individual method. Hot water syringed drop by drop into the empty alveolus, prolonged compression of the socket with the fingers, or the actual cautery may be sometimes resorted to. Some recommend pressure upon or even ligation of the external carotid artery, but this is a very doubtful help. It is probably well to mention here that during a fainting spell hemorrhage will invariably cease so long as the spell lasts.

The treatment of alveolar hemorrhage as suggested by Ritter has given us, with some alterations, universal satisfaction. The tooth socket is forcibly syringed with hot water and iodoform gauze cut in strips and rolled in tannic acid is tightly plugged in each *single alveolus* up to the gingival border. This careful plugging is of the utmost importance for complete success of the operation. A little softened modeling compound is then well pressed over the plug, the jaws are closed, the compound removed, chilled and replaced, and a bandage applied about the head for keeping the splint in place. This is kept undisturbed for about two days, the splint keeping the teeth far enough apart to introduce liquid food. After removing the compound and plug the parts are painted with astringent solution. In a case of emergency we were forced to use the actual cautery. Not having a galvanic apparatus at hand, a ball-shaped amalgam burnisher was heated to dull redness and the socket of the empty alveolus slightly touched about twelve or fifteen times. The hemorrhage stopped at once. Seemingly the pain produced by the hot iron is much less than we should expect it to be.

For internal medications small repeated doses of sugar of lead and opium in combination are very useful; fluid extract of ergot, aromatic sulphuric acid, etc., may also be suggested. The patient should assume an erect position, be kept away from all excitement, and diet himself. Lemonade and ice-water are useful for quenching the thirst, but under no circumstances should alcoholic liquids be given, as they increase the blood pressure.

A great factor on the part of the dentist himself is to preserve absolute coolness; this will aid him to master the situation at once and to gain the confidence of the patient, a material help in accomplishing his task.

Discussion. Dr. E. B. Crane: In treating cases of hemorrhage occurring some hours after extraction I always use a combination of tannic acid and plaster. Take two tablespoonsful of the plaster and one teaspoonful of tannic acid, which makes a stiff batter, and then press this down firmly on the gum. The hemorrhage will be stopped in less than two minutes, and in four or five days the plaster will become soft and disappear. I have never failed with a case thus treated.

The main point of disagreement in the discussion was whether chlorid of iron should be used when tannic acid was ineffectual. Dr. Marshall stated that no condition ever existed which would warrant its use, while others claimed to have employed it successfully and without bad results.

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### REMOVAL OF THE DENTAL PULP.

BY B. HOLLY SMITH, D.D.S., BALTIMORE, MD. ABSTRACT OF A PAPER READ  
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Those familiar with the history of the healing art will consent to the proposition that in the proportion that medicine has grown scientific and skillful has less dependence been placed in the therapeutic effects of drugs for the alleviation of human ills. Thirty years ago it was no uncommon thing for a patient to be salivated with mercury and deafened by quinin administered for the relief of a slight attack of malarial fever.

That these exhibitions are less frequent to-day is due not to the fact that these drugs have lost their anti-malarial efficacy, but to the data furnished by the scientific investigators of the pathological

action of drugs. Secondary effect has assumed greater importance and possible evils attending administration have outweighed the advantage of immediate relief.

The practitioners of the specialty of dentistry for more than half a century (since the introduction of arsenic into the profession by Spooner in 1836) have resorted to the application of arsenious acid to the dental pulp with a view to its destruction. For years the teaching was that the arsenic should not remain in the tooth cavity longer than twenty-four hours; but of late it is not uncommon to leave it sealed in for two weeks, and many do not disturb it until disintegration of the pulp has taken place. We are told that it is not necessary to expose the pulp to make the application effective; that the arsenic will penetrate the dentinal tubuli and the pulp destruction will be accomplished painlessly. Indeed so penetrating are we led to believe this agent to be, that a recent writer has claimed that teeth to be crowned should have their pulps destroyed and removed, as the slight amount of arsenic contained in the cements with which the crown is set probably will cause pulp destruction.

Has anyone found the exact limits of the destructive power of this agent? Is it a fact that this treatment, which has persisted so many years with little modification, has been attended with no secondary evils? It becomes a very difficult matter from a clinical standpoint to answer these questions without fear of contradiction. That pericemental disturbances do frequently occur can be stated without dispute. That arsenic may be the cause of it has long been the thought of the writer. This opinion has been formed through observation of the contrast between pulpless teeth made so by surgical procedure pure and simple, and those from which the pulps have been removed after the application of arsenical preparations; this observation covering a period of sixteen years. During this period I have yet to see a case of pericemental inflammation or abscess where the pulp has been removed without resort to the use of arsenic. The contention has been that where pericemental disturbances occur in teeth in which the pulps have been destroyed by arsenic, it is the result of faulty technique or failure to operate under proper aseptic conditions. We think this assumption untenable, in view of the fact that skilled, clean and careful operators have not been able to establish any record not indicating cases of apical or pericemental trouble, in spite of reasonable precautions.

If, as has been stated, arsenic will destroy the dental pulp by an extension of its action through the dentinal tubuli, it cannot be disputed that its fatal effects upon that organ must also embrace the contents of the dentinal tubuli throughout the tooth. The well-known germicidal qualities of arsenic, together with the fact that it has been used successfully as the chief ingredient of embalming fluids, would indicate that no trouble should be expected from the contents of these tubuli when they have been subjected to the arsenical application and securely sealed from the chance of subsequent infection. Indeed, it would seem that the contents of the pulp-canal and tubuli while directly under the influence of the arsenic would offer a very poor field for infection; and it seldom happens even in careless hands that immediate unfavorable results follow. The contents of these tubuli, shut off from outward infection, separated from the circulation and under the embalming influence of the arsenic, would seem to offer no menace to the health of the tooth, even though the apex were imperfectly sealed; yet trouble not infrequently arises in afteryears, even when the operator has been reasonably certain that the apex was entirely closed.

Why? Is it possible that a sleeping volcano has been located in the apical space by the application of arsenic, that the effect of the agent has not been limited to the confines of the pulp-canal and dentinal tubuli, that the area of the tissue affected breaks down in seasons of depressed vitality, or becomes infected through the medium of the circulation? Why should the arsenic affect only the contents of the pulp-canal and dentinal tubuli? The apical opening may be infinitesimal, but it must of necessity be large in comparison with the tubuli in the dentin. Why may not the nerves and vessels in the apical space and a considerable area of the pericemental membrane have a share in the action of the arsenic? There is no positive evidence of a well-defined line of demarkation in the effect, even after the agent passes the point where it has power to destroy; may it not deplete and incapacitate the tissues until disaster is invited and may subsequently occur?

The most doughty and enthusiastic advocate of arsenious acid, Dr. J. Foster Flagg, (in the *Cosmos* for July, 1877) says: "It is the almost universal experience that after an arsenical application has remained in the tooth for several days soreness of the organ supervenes; a tenderness upon occlusion; slight pain from striking,



etc.—all indications, apparently, of peridental difficulty; but these same symptoms are concomitant with the dying of the last portion of pulp, no matter from what cause, and if a pulp be extirpated during the existence of this condition, it will under the microscope present an appearance which will clearly indicate the reason for such tenderness in the evident absence of vitality in the greater portion of the tissue, and the equally evident presence of high inflammation in that portion immediately contiguous to the apical foramen." If this state of inflammation occurs in every case with the dying of the pulp, why is it not better that it be extirpated under the influence of an anesthetic?

Arkovy indicates that the agent is quickly taken up into the blood-vessels, no coagulation of tissues whatever occurring. He says, "It has a specific influence upon the blood corpuscles, combining with the haemoglobin to form a compound of arsen-haemoglobin. In nearly every case it is taken up in substantia (in the form of molecules) into the blood ways; when there it produces, besides the above mentioned changes, granular detritus of the contents. The nuclei in the neurilemma are somewhat increased, granular destruction of the myelin, and here and there disappearance of the axis-cylinder occur."

Dr. Kirk in a recently published paper (*Cosmos*, August, 1898) says, "Broadly considered, any inflammatory action is a disturbance of the normal processes of nutrition; this is true of both general and local inflammations, the disturbance being proportioned to the intensity of the irritative action. Where bacteria and their products are the excitants of the inflammation their effective invasion is conditional upon the vital status of the tissue concerned. If the vital resistance of the tissue is sufficiently high it becomes immune and bacterial invasion is impossible. The vital potential of a tissue is the result of the sum total of its nutritive processes normally performed. Any interference with the normal nutritive process therefore results in a diminution of the vital potential of a tissue and renders it liable to invasion by bacteria with consequently inflammatory reaction. A disturbance of normal nutrition resulting in lowered vital resistance is therefore a precedent condition to effective bacterial invasion."

This is exactly what we may expect of the remote effects of arsenic, to lower vital tone, disturb nutrition, and by so doing

invite infection. It is not claimed that any extended amount of tissue beyond the apex is as profoundly impressed as the pulp-structure, for if such were the case, immediate expression of this pathological condition would ensue. The records of surgery furnish abundant evidence of encysted areas which subsequently break down and become infected through the circulation. This, we believe, is the rational explanation of pathological expressions occurring in the apical space of teeth which have been treated with arsenic.

If the suspicions which have been aroused in the mind of the writer have any foundation in fact, and if he has correctly interpreted his clinical experience, arsenic should no longer enjoy its universal popularity but should give place to surgical procedure. Ten years ago this would have been more difficult than it is to-day, and the difficulty of to-day involves not so much the absence of other means, but aversion to a change of practice and the well-fixed habit which has fastened itself upon the profession of treating teeth for which no charge is made. Some of our best operators will assign two hours to a patient to fill a tooth with gold, and five minutes in which to destroy a pulp. If we can justly claim to be dental surgeons and not mere cavity-stoppers, this is not right and must be changed. One or two hours is not too long for the removal of a dental pulp, and a fee of \$10 to \$25 is not too much to charge for its accomplishment.

The first consideration of the surgeon is the necessity of operative procedure; second, that the patient and field of operation are in as favorable condition as can be obtained. These general considerations are not to be overlooked by the dental surgeon. No effort should be made to remove a dental pulp in a high state of inflammation. Antiphlogistic agents must be used until the irritation with its consequent dilatation of vessels has subsided.

My custom has been to flood the cavity with tepid solution of bicarbonate of soda; the cavity is then closed with a pledget of cotton saturated in cocain hydrochlorat for a few moments, care being taken not to allow any pressure to defeat the object of the application. If any excess of debris or accumulation of leathery decay is found in the cavity an effort is made to remove enough of it to gain access for subsequent applications to the pulp, not entirely uncovering that organ however. Great care is taken not to cause

any pain, for the patient has been assured that the treatment may take time and patience, but is to cause no pain. To break this promise at any time would be unfortunate, but to do so in the initial treatment would be suicidal to the confidence so essential to success.

A concave disk of vacuum cavity material, made by driving the reverse or butt end of an excavator into a sheet of the metal held on a lead or wooden block, is now adjusted to the cavity so that its edges will impinge upon the walls and prevent pressure. Under this disk a pledget of cotton saturated with oil of cloves is placed, the whole then being covered with temporary stopping. The gum over the affected tooth is painted with aconite and iodine in equal parts, and the patient dismissed until one or preferably two hours can be reserved for the operation. If pain has ceased and the excessive irritability subsided when the patient reappears, the pulp is cocaineized with the electric current and removed. Here we will have to proceed cautiously, but the reward is in sight. Why should we not have patience? My practice is to use a minimum amount of current and a saturated solution of cocaine. I have heard complaints of occasional failure of cataphoresis. A surgeon is full of resources; if cataphoresis is not successful in the fullest sense, it may be supplemented by injection or by the administration of a general anesthetic, preferably nitrous oxid gas. In all cases where teeth containing living pulps are to be excised or ground down, advantage is taken of the opportunity to remove the pulp under the influence of the shock of the excision. This can be done with no pain whatever; the apprehension of the patient being lessened by cutting the enamel with disks or burs, leaving only so much to be excised with the forceps as will not require any great stress or violence. A cone-shaped bur of suitable size is ready in the engine, clean and sharp; broach, etc. are to be ready, for the entire pulp must be removed instantly. The bur may not be necessary, but if the pulp is not freely exposed it should be plunged into the canal, the ragged orifice enlarged and the pulp broken up. The broach is now passed quickly to the apex and the pulp twisted out in toto. It is needless to say that surgery finds its most inviting field in the single-rooted teeth, but success can be attained also with the molars, if the effort is painstaking. Surgery is not only more scientific, but when it is proven to be more successful, a plea for this alteration of our methods of practice should not be unheeded.

### Digests.

DEATH FROM PYEMIA FOLLOWING ATTEMPT AT TOOTH EXTRACTION. A chemist's assistant, 18 years of age, endeavored to extract some roots of a left upper molar by means of a sharpened wooden penholder. After these attempts at amateur tooth extraction he suffered severe pain in the neighborhood of the roots and some swelling which progressively increased in size, involving the cheek adjacent to it. Three days later a blackish slough commenced to form and the patient applied for treatment to the hospital, where he was ordered a mouth-wash. Two days later he again went to the hospital, and when seen by the surgeon of the day was found to have a blackish slough, separated by a distinct line of demarcation from the surrounding tissues, which were much inflamed. The slough occupied the region of the upper left molar teeth and extended inwards into the palate, involving it to an area of about the size of a quarter. The temperature was 102.6; pulse rate 120; tongue was foul and patient looked ill. He was anesthetised, the slough freely scraped away and the tissues cauterized with pure carbolic. In spite of this treatment another slough formed, the adjacent teeth became loose, and the bone was stripped and laid bare by burrowing pus, which could be freely squeezed out. The patient was again anesthetised and the parts were freely scraped a second time. Owing to great respiratory embarrassment during the anesthesia tracheotomy was performed. The edges of this wound also showed signs of sloughing, and gradually the patient sank, dying some days later. The post-mortem examination showed multiple visceral abscesses, etc.—*Dental Record, August, 1898.*

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EXPERIMENTS REGARDING THE "SETTING" OF PLASTER OF PARIS. J. A. Belcher reports (*Treatment*) the results of experiments undertaken to determine the effects of the various agents on the "setting" of plaster of paris: "Two drams of plaster mixed with one dram of a 5-per-cent solution of sodium chlorid, hardened in two minutes. Mixed with one dram of a 5-per-cent solution of sugar it hardened in three minutes and a half. Mixed with one dram of a 1-per-cent sodium chlorid solution it hardened in five minutes. Mixed with one dram of a 0.5-per-cent sodium

chlorid solution it hardened in five minutes. Mixed with one dram of a 5-per-cent calcium chlorid solution it hardened in six minutes and a half. Mixed with one dram of tap water it hardened in nine minutes. Mixed with one dram of distilled water it hardened in nine minutes. Mixed with one dram of saturated solution of sodium chlorid it hardened in eighteen minutes. Mixed with one dram of a 5-per-cent solution of glycerin in distilled water it hardened in nineteen minutes. Mixed with one dram of 5-per-cent solution of white of egg in distilled water it hardened in twenty minutes. Mixed with one dram of a 10-per-cent solution of white of egg in distilled water it hardened in twenty-five minutes. Mixed with one dram of a 10-per-cent solution of glycerin in distilled water it hardened in thirty-five minutes. Mixed with one dram of a 25-per-cent solution of glycerin in distilled water it hardened in sixty minutes." The figures tell, says Belcher, their own tale, and show that where it is of importance to make plaster of paris set rapidly it should be mixed with a 5-per-cent solution of common salt, and this may be made roughly by adding a tablespoonful of salt to a pint of water.—*Scientific American*, Aug. 13.

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**REMOVAL OF INFERIOR DENTAL NERVE THROUGH THE MOUTH.** Dr. Alexander H. Ferguson reported to the Chicago Medical Society, on April 13, a case of neuralgia, in which all of the three branches of the nerve were affected. The tongue and the ear were also involved, and medical treatment had proved useless. The inferior dental nerve was then removed in view of the removal of the Gasserian ganglion, a much graver operation. The head was thrown well back and a gag put in the mouth. The distribution of the inferior dental nerve was then cut at its exit and from the mental foramen, and dissected out at that point and cut as it began to divide in its distribution. A half-inch trephine was then used on the jaw where the last two molar teeth were situated. After the gums had been separated longitudinally and the soft parts pushed to one side, a trephine was applied on the inferior maxilla and the nerve exposed where it traveled through the jaw. An incision was made parallel to the ascending ramus of the jaw and a little to the inner side thereof, cutting through the mucous membrane, and by blunt dissection the nerve was found as it entered the foramen on the inside of the jaw, a good guide being the sharp

spiculum situated in that part. After the nerve had been severed at the mental foramen and exposed at its entrance into the inferior maxilla, it was extirpated *in toto* by pulling it out from the middle of the jaw, and then hooking it from the upper incision until it hung loose, then following it up as far as possible and cutting it. In this procedure the artery was injured and the wound had to be packed firmly. Packing was left in three days, then removed and no hemorrhage followed. Patient was relieved instantly and has remained free from pain since.—*Chicago Medical Reporter, May, 1898.*

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#### LABORDE TREATMENT OF CHLOROFORM ASPHYXIA.

Herzog of Charkow has recently published in the *Deutsche Zeitschrift für Chirurgie* some experiments made according to Dr. Laborde's method of producing resuscitation in cases of chloroform and ether asphyxia by rhythmic traction of the tongue. The effect of making traction on the tongue is to stimulate its sensory nerves, and to bring about reflex contraction of the respiratory muscles through the medium of the central nervous system. Dr. Laborde recommends that the tongue should be seized firmly, and traction be made about twenty times a minute. Up to the present time twelve cases have been recorded in which this method proved successful in asphyxia from anesthetics. For the purpose of testing Dr. Laborde's conclusions, Herzog made a series of experiments on dogs partially asphyxiated by means of large doses of chloroform and ether, and found that in nineteen cases respiration was restored spontaneously in six, but that traction of the tongue was only successful in resuscitating three of the remaining thirteen. In these three instances the animals began to breathe again after traction had been made twelve times, and their recovery was complete; in two other cases respiration was restored, but the cardiac action nevertheless failed, and although the respiration was kept up for sixteen and six minutes respectively the pulse did not rally and the animals died. The results obtained by Herzog are thus at variance with those of Dr. Laborde, who obtained resuscitation in the great majority of cases. It is probable that Dr. Laborde commenced to make traction of the tongue at an early stage, when the animals were still capable of recovering spontaneously. The asphyxia obtained in Dr. Herzog's experiments always occurred in the last stage of the narcosis. Asphyxia in the early stage of the narcosis, while it is



so frequent in the human subject, could not be obtained in the experiments on animals. Herzog concludes that Dr. Laborde's method is not reliable in the asphyxia of the last stage of narcosis, but that it may be tried as an auxiliary to other methods in the primary steps.—*London Lancet*, July 9.

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**INFLUENCE OF DIET ON GOUT.** The conclusions arrived at by Dr. A. P. Luff in his notable Goulstonian lectures of last year have been added to by a series of elaborate and effective researches by that investigator, which tend not only to disclose the origin of uratic deposits, but in addition to furnish certain clews to the dietetic management of gout.

It will be remembered that Dr. Luff decided that uric acid is normally produced only in the kidney, and is not normally present in the blood of mammals. It is normally formed from urea, probably by conjunction with glycosin; that in gout uric acid is present as a soluble sodium quadriurate, and that in its soluble form it is not a toxic agent. It is precipitated in the tissues as sodium biurate. Its nonexcretion in the soluble form is probably due to some affection in the lining epithelium of the convoluted tubes. The sodium quadriurate is not accelerated in its decomposition by diminution of the alkalinity of the blood, nor does increased alkalinity increase the solubility of the sodium biurate. Luff has found that the solubility of sodium biurate is not only increased by the presence in the blood of the saline constituents of vegetables, but that these same salines exercise a remarkable inhibitory power over the decomposition of sodium quadriurate. The solubility of the sodium biurate was also found to be decreased by adding the salines of meats.

The bearing of these conclusions upon the dietetic management of gout is noteworthy, and Dr. Luff has recently undertaken a new series of experiments with a view of ascertaining the relative effects of the mineral constituents of meat and vegetables upon the solubility of the biurate, and so to determine inferentially what might retard the conversion of the quadriurate into biurate. Speaking in general, Dr. Luff found that small proportions of the mineral constituents of the ash of nearly all vegetables increased the solubility of the biurate. This could not be attributed apparently to any common saline constituent of vegetables, for by careful experiment

it was decided that this property possessed by certain vegetables did not depend upon its sodium, calcium or magnesium salts, but pertained to the vegetables as vegetables. It is to be supposed that the natural vegetable ash is a combination which cannot be successfully imitated, and like certain mineral waters it possesses virtues which its imitation by artificial means does not possess. The vegetables active in retarding the conversion of the quadriurate into biurate were spinach, Brussels sprouts, turnip tops, turnips and celery.

The important point in these conclusions is that the alkaline factor is not the important one achieved by the administration of these vegetables. The methods by which our ancestors relieved each other of exacerbations of gout by the administration of vegetable ashes receive some justification through the researches effected in the modern chemical laboratory.—*Medical Age*, August, 1898.

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THE GENESIS OF A WORD. By Henry H. Burchard, M.D., D.D.S., Philadelphia. In accordance with what the writer has always believed to be a well-founded plan to solve difficulties in pronunciation and definitions, a search was made recently for the significance of the word tooth, as based upon its etymology. The pedigree, the evolution of the word from its simplest, or better say original form, to its present spelling and pronunciation is interesting as a specimen of comparative philology and the migration of languages.

The word also furnishes an additional argument for the doubts which have been raised as to the birthplace of the Aryan languages. Upon the assumption that this birthplace is to be sought in the region in which it appears a common ancestor of all Indo-European languages, a general agreement until lately placed this place of origin somewhere in the neighborhood of the highlands of Northern India. Within recent years well-founded exceptions have been taken to the unqualified acceptance of this belief; for as shown by Isaac Taylor, "Origin of the Aryans, 1889," a critical examination of the Sanscrit with other vocabularies shows that some words undoubtedly more primitive than Sanscrit may be found in Lithuanian, and in addition to this words exist in Sanscrit which have no explanation of local origin, but appear to be transplanted from another source, apparently Lithuanian.

The primitive word for tooth is in Sanscrit *danta*, in Lithuanian

*dantis*, clearly progenitors of the Greek *odous*, *odontos*, and the Latin *dens*, *dentis*. The early migration of Aryan races is indicated by the appearance of a similar word among the Kelts of Wales, where the form *dant* appears. It might be suggested that *dant* is a modification of the Latin *dens* and a relic of the Roman conquest of Britain, were it not that the word antedates the Roman invasion of Britain.

By the common interchange of *th* for *d* and *z* for *d*, found even at the present day in the pronunciations of foreigners, *dantis* appears in Gothic as *tunthus*, and later in German as *zahn*. The Low German form of Saxon and Dutch gives *tand*, and the direct progenitor of tooth appears in Anglo-Saxon as *tódh*. In this word it is probable that *t* replaces the *d*, giving *tolh*, a form undoubtedly seen in very early English literature; the change to tooth is but slight. Teeth is a typical Anglo-Saxon plural. The *tand* of the Low-Dutch appears in Danish, Sweden and Old-Saxon alike, so that there can be no doubt of the genesis of the Anglo-Saxon "English."

A COMPEND OF COMPARATIVE DENTAL ANATOMY.

TEETH.—	Definition.		
	Classes.		
	Structure.		
	Development.		
	Arrangement: { Monophyodont.		
		{ Diphyodont.	
Danish— <i>tand</i> .	th	Saxon and Dutch— <i>tand</i> .	
Swedish— <i>tand</i> .	d	Anglo Saxon— <i>tódh</i> .	
Old-Saxon— <i>tand</i> .	z	Gothic— <i>tunthus</i> .	
		English— <i>tooth</i> — <i>teeth</i> .	

—*Dental Practitioner and Advertiser*, July, 1898.

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EFFECT OF HEAT ON DENTIN. By Dr. G. W. Cook, Chicago. Abstract of paper read before Tri-State Dental Meeting, June 22, 1898. In investigating the amount of heat that can be used in a tooth three factors are to be taken into consideration: The effect of heat on bacteria, amount of moisture extracted, and effect on the dentin. A temperature of 130° centigrade continued for four and one-half minutes will in three applications sterilize a root-canal, but this causes a loss of moisture, and what effect that will have on the tooth is a question.

The organic matter in a tooth consists of colloids easily reduced to gelatin by boiling, and which form a sort of matrix or base by

which the inorganic salts are held together, this forming a hard, and to a degree elastic and flexible body.

It is well known that all colloid substances take up a certain per cent of water by imbibition, and their elasticity and flexibility are largely due to this property of taking up water. On the other hand, if the water is driven off by heat or otherwise, a shrinking follows, and instead of being elastic and flexible they become brittle and inelastic. From these facts the brittleness of old, dry teeth, or teeth which have been subjected to a degree of heat sufficient to drive off water, can be explained.

Although it is hard to make out any contraction in the dentin or separation of it from the enamel, yet it is a well-proven fact that after drying the enamel is easily broken off from the dentin and the whole tooth structure rendered more brittle. This can be explained only by assuming that the water held mechanically by the colloid matrix of the tooth has been driven off, thus rendering the organic structure brittle and non-elastic.

When teeth have been subjected to three applications of a root-canal drier, continuing four and one-half minutes each, of a temperature of 130° centigrade, there was a loss of 0.65 to 1 per cent of weight due to driving off the moisture. This did not seem to lessen the resistance toward pressure at all, but it did render the tooth substance more brittle.

In conclusion, the author believes that the application of the root-drier at a temperature of from 90° to 130° centigrade for a few minutes is all right, but if the drier is hot enough to cause the hissing sound which is heard at a temperature of 170° centigrade, moisture is being driven out of the organic substance and the tooth is becoming brittle.—*Indiana Dental Journal*, July, 1898.

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STATUS OF THE DEGREE D.D.S. UNDER THE LAW.  
By Dr. W. G. Chase, Philadelphia. Read before Union Meeting at Baltimore, June 2, 1898. In other words, to what extent may the holder of this degree lawfully prescribe medicines for his patients, to be taken by the alimentary canal or in the other usual ways of administering medicine? In all states there are laws purporting to regulate the practice of dentistry, some more stringent than others. I have yet to find one wherein the status of the D.D.S., or what constitutes dental practice, is defined. They all say a person must

either have a diploma or pass an examination before a state board, and in many states, in fact most states, both diploma and examination are required before a person can practice the profession of a dentist. Some states are more stringent in their requirements than others. It is not necessary for me to name the requirements of the different state boards or colleges, as you are all familiar with them; nor do I think they are more than is necessary to keep up the proper standard of our profession.

If you will examine the dental laws of the different states of these United States you will find in most, if not all, a clause which exempts a physician from offending in the extraction of teeth, etc. On the other hand, examine the laws relating to the practice of medicine; do you find any reference to the dentist? No; or, if you do, you have found more than I have. I have no objection to the M.D. extracting teeth (so far as I am concerned individually he can do it all), but this shows the laws of the two professions are not fully in accord. Nor do I wish to be interpreted as antagonizing the M. D., for I am not, for we often need him and badly, especially when a certificate of death is necessary; but fortunately we as dentists do not often kill our patients.

Notwithstanding that the laws regulating the practice of medicine say that a man must have the degree of M.D. in order to prescribe medicine, and that laws regulating the practice of dental surgery say naught on this subject, I have always advocated and practiced the prescribing of medicine in such cases as I was called upon to treat which, in my judgment, needed medicine internally. I believe I am fully within my rights as a dentist in so doing. Claiming that the degree of Doctor of Dental Surgery, as conferred by the colleges and universities chartered under the laws of the different states of these United States, gives the holder thereof, when properly approved by the state board wherein the holder intends to or does practice, the right and authority to administer anesthetics, drugs or remedies for the alleviation of such diseases as come under the dentist's care, I also believe that in case he (the dentist) failed to so prescribe, or saw to it that the remedies needed were prescribed in case he felt himself incompetent (which would be a sad case), he would not be doing his duty.

Mr. Benjamin Alexander, an attorney-at-law of Philadelphia, says: "If it be discovered in the treatment of a patient that an

internal medicine is necessary to improve the part treated or operated upon, it is obligatory upon the dentist to prescribe. If unable to prescribe, he should immediately recommend the patient to a physician for the purpose of obtaining the necessary remedy. A failure on his part to attract the patient's attention to his condition would render the dentist liable." I do not believe we as dentists encroach upon the physician's prerogatives. There are many conditions that it would be inexpedient as well as inconvenient for the dentist to treat that come under his care or notice, in which event it is our duty to refer the case to a physician; but there are diseases that come under the dentist's care that he should treat mainly from the fact that the M.D. knows little if anything of them or their treatment.

If the dentist's hands were tied through the law not giving him the right to prescribe, he would be forced to do one of two things—violate the law or say to the patient, "I know what to give you, but the law will not permit me. I will have to refer you to a physician. I can only fill your teeth or furnish you substitutes." This is not a pleasant picture, though I have drawn it imperfectly, and I am glad to say that I do not believe the law so hems us in.

If dentists had no legal or moral right to prescribe medicine for their patients, dental surgery would cease to be a profession; it would be merely a trade. We would have no need of colleges to teach it nor examining boards to regulate it. I do not believe it possible for a man to successfully practice the dental profession unless he is well grounded in pathology, materia medica and therapeutics, as well as in the other branches of the profession.

Judge C. G. Garrison, of the New Jersey bar, says a dentist may be defined to be one whose occupation is the care of the teeth when sound, the treatment of their deformities and diseases when unsound, and the adaptation of substitutes for them when lost by age, accident, or disease. He further says that this definition embraces the hygiene not only of the mouth but also of the general system, of which the teeth are a sensitive index, and includes operations upon the alveolar process and adjacent bone. In a case of caries, or necrosis of the jaws, without the knowledge of medicine and the lawful right to prescribe such remedies as the case demanded, the dentist most assuredly would not be able to do his full duty by the patient presenting such a case.



I also call to your attention an opinion given me by William W. Smithers, of Philadelphia, a lawyer of note. "A Doctor of Dental Surgery is neither a physician nor a surgeon, properly so-called. He is a surgeon of limited character and his skill must be exercised within the limits of dentistry. It extends to care and treatment of the teeth and the mouth in general. Obviously he can have nothing to do with a fractured leg or a case of indigestion. Independently of any treatment of the mouth or teeth, the dentist can neither perform a surgical operation nor administer medicine. But where the administering of medicine is subservient to the practice of dentistry, it is perfectly lawful. For example, the giving of gas or the prescribing of a drug to counteract the effect of a diseased or extracted tooth upon the stomach would be entirely proper. It must rest with the individual practitioner to use his judgment and say under the circumstances of each case whether the administering of the medicine is necessarily incidental to the practice of dentistry."

A different construction is given in England. The province of a dentist embraces the art of treating diseases and lesions of the teeth and supplying artificial substances in the place of these organs when lost. While it is recognized that many causes are systemic, yet the dentist cannot prescribe for the relief of his patient except he is a qualified physician or surgeon. All the dentist can do is to relieve local trouble.

While the subject of a national law is being talked of and hoped for, there should also be a law not only regulating the practice of dentistry, but it should at the same time define in a clear and concise manner of what the practice of dental surgery consists and what dentists' rights and privileges are. If you remember, when you received your degree the one upon whom devolved the duty of conferring it addressed you in language similar to this: "By the power in me vested by the charter and commonwealth of (naming state), I do confer upon you and each of you the degree of Doctor of Dental Surgery, and therewith all the rights, privileges and immunities of this degree."

It was not explained to me, nor do I believe to any of you, just what was meant, but all were left to interpret these words according to their own ideas. I have kept away from the old subject of dentistry being a specialty of medicine, as I do not care to get into an

argument on that subject. I believe we as dentists want to go hand in hand with the physician as brothers and equals, and not as inferiors.

I unfortunately know no legal light in your section, so I cannot give you an opinion from this state or section. The opinions I have given are not based entirely upon local laws of Pennsylvania or New Jersey, but the gentlemen have tried to give a common law opinion, and I think under those opinions a dentist has the legal right to prescribe medicine for his patients for all diseases that come under the dentist's care.—*Dental Cosmos*, July, 1898.

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**PHYSIOLOGICAL, ANTAGONISM.** By Dr. George E. Johnson, Ft. Wayne, Ind. Read before the Indiana State Dental Association. By "Physiological Antagonism" in the science of medicine is meant a balance of opposed actions on particular organs and tissues. I imagine I hear you say, "He is not a little sugar-pill man or a benedict of Hahnemann," although I do acknowledge that some diseases are cured by contraries and some by similars, but similars are contraries so far as they remove the causes of disease or abnormal function, so the law of antagonism still holds sway. *Similia similibus curantur* operates in only a limited number of diseases, so we cannot rely on treating or duplicating symptoms for restoring lost equilibrium, or pathological physiology. I cannot in the time allotted to a paper do more than treat the physical basis of the principle of antagonism and illustrate the mode of action and application of some of the remedies used in dental and oral diseases.

The basic principle of an opposition of action finds its strongest support in the mechanism of many functions. In the brain, the medulla oblongata and cord are centers which control every function of the physical body, whether it be voluntary or involuntary. In the great nervous systems, viz., the sensory, vaso-motor and the great sympathetic, we have a beautiful illustration of the division and union of labor, each having its office to perform, yet bound together in the bonds of sympathy, making one grand system working together for one high aim, the protection and preservation of the body of which they form a part. The opposition of forces to maintain the equilibrium is demonstrated in the spasm center of Nothnagel, which is a center of extreme reflex sensibility situated in the medulla oblongata, and just above it Setchenow's inhibitory center, with its correcting or restraining influence over reflex movements.

If there were no antagonist or governor for the spasm center, think of the very unpleasant reflex effects from every trifling peripheral irritation, but each is a great force, and when correctly balanced the nervous system sustains no unpleasant shock or results such as reflex neuralgia, lockjaw or tetanic convulsions. We have an admirable illustration of opposing forces in the cardiac and respiratory mechanism, producing order and rhythm. The movements of the large vessels are regulated by the largest of the cranial nerves, the pneumogastric (or parvagus), which, in turn, has its center in the medulla, and supplies the voice and respiration with motor and sensory filaments, and the pharynx, œsophagus, stomach and heart, with motor; and as the heart is also supplied from the recurrent laryngeal and the great cardiac plexus of the sympathetic, you will readily observe the opposition of forces and how the vascular tonus is maintained by the dilator and constrictor actions.

Perhaps the best illustration of opposing forces may be shown in the application of cold and heat in the following experiment: Lay the heart of a turtle or frog on a metallic plate, and if maintained at the normal temperature it will continue to act rhythmically for some time, but upon cooling the plate with ice you may slow or arrest its action; then on applying heat it begins to pulsate again, and still more rapidly as the heat is increased within proper limits. Another experiment: Drop a small quantity of serum containing a slight trace of muscarine on it, and the heart will be arrested in diastole, but upon applying a 0.2 per cent solution of atropia the pulsations begin again.

Reciprocity of action in the nervous mechanism regulates the blood pressure in the vascular system and thus prevents fatal results. Should the arterioles of the body dilate from local or constitutional cause, the heart increases its action automatically; on the other hand, should the arterioles contract or take on a spasm, the heart's action is as suddenly lessened, thus maintaining the equilibrium, and preventing breach or rupture of the vascular system. The same reciprocity of action regulates the respiratory movements and many other functions we will not discuss in this paper, as this will suffice to demonstrate the basic principle of opposing forces in their beneficence, and I shall now apply the principle in the treatment of inflammation, counter-irritation, tetanus, facial paralysis, hemorrhage, neuralgia and anesthetics or anodynes.

Taking it for granted you understand the pathology of the different stages of inflammation, I shall treat it from the science of physiological therapeutics. Either local or constitutional remedies, or both, should be applied or administered to antagonize the dilatation (or paresis) of the walls of the arteries and arterioles in the hyperemic stage, but this treatment in stasis or exudation would be a very serious mistake. Aconite and iodin as local and quinin and morphin as constitutional remedies will raise the tonus of the arterioles, check the amoebiform movements of the leucocytes and the outward diffusion of albumen, fibrin and salts, but chloral hydrate is especially useful prior to the stage of complete stasis, as it diminishes the heat, dissolves exudations, and has a hypnotic action to quiet restlessness.

Local applications of heat at first produce hyperemia by the dilatation of the arterioles (paresis of the sympathetic filaments), but continued application of heat stimulates the vaso-motor to increased nutrition and thereby removes the difficulty, if the heat does not greatly exceed the normal temperature of the body. While on the other hand, cold first produces contraction or spasm of the vaso-motor filaments (anemia), and if remitted will result in hyperemia, and if extreme cold is long continued will result in stasis and finally gangrene, by impoverishing the parts.

Counterirritation circumscribes itself by vesication, induces an afflux of blood, stimulates the filaments of the vaso-motor by paralyzing the end filaments of the sympathetic.

Tetanic convulsions proceed from peripheral irritation, a wound or a contusion, and you ask an explanation. This is an abnormal excitability or irritability of Nothnagel's spasm center, due to the functional inactivity of the inhibitory center of Setchenow.

What are the symptoms and how antagonize? A sudden deathly pallor which means contraction or spasm of the arterioles of the brain, next partial or complete paresis of the pneumogastric. What is the result? Suspension of respiration and next cyanosis as a result of suspension of respiration, and lastly paresis of the heart.

We now understand the exact pathological condition along the line from cause to effect. How antagonize? Relieve the spasm at the starting point and the symptoms will quickly disappear. Inhalation of nitrite of amyl, administration of chloral, bromid of potassium, physostigma, and gelsemium are indicated, the same

remedies being indicated in cases of poisoning by strychnia, as this produces the same functional disturbance. The reverse, viz., facial paralysis, strychnia and electricity are indicated.

Who in this age of medical science needs to resort to the medley of ancient astringents, brown paper, spiderwebs or pow-wow for hemorrhage or hemorrhagic diathesis? Relaxation of the vessel walls and the arterioles, and consequent acceleration of the heart action are the conditions to antagonize, and the best remedies are ergot, digitalis, bromid of potassium, veratrum, virid, etc., with tincture of chlorid of iron.

We now come to the most interesting section of my paper to very many—neuralgia and anesthetics, which I shall treat as pain and anodynes. Dr. Gross said, "If America had contributed nothing more to the stock of human happiness than anesthetics, the world would owe her an everlasting debt of gratitude." But to analyze pain, what is it? How prevent it? Or, how antagonize it? Pain is composed of several elements and degrees of intensity, and is the result of real or imaginary injury. I shall not treat this subject from a psychological point of view, but will simply say that it is a consciousness or realization of an injury, real or imaginary, reflected to and through the spasm center of Nothnagel, exalting or exaggerating this center to extreme sensibility. Hence those two great forces of the animal economy, inhibition and spasm, are thrown off their equilibrium by overpowering the inhibitory center; therefore it is apparent that whatever agent, with power of exalting inhibition or suspending reflex action, will prevent or relieve pain or restore lost equilibrium, and this may be accomplished by two methods, local and general analgesia.

Any remedy which applied locally paralyzes the end filaments of the sensory, prevents or destroys the transmission of sensation to the center; prevents pain. This action we have in aconite, chloral, cannabis indica, cocain and many other drugs varying in effectiveness. Any remedy or combination of remedies which suspends reflex sensibility of the center without impairing other functions is the agent we have searched to find.—*Indiana Dental Journal, July, 1898.*

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MANIFESTATIONS OF SYPHILIS IN THE MOUTH. By I. Duncan Bulkley, A.M., M.D., New York. Read before the New York Odontological Society Feb. 15, 1898. Eight years ago

I had the honor to address this society upon "the dangers arising from syphilis in the practice of dentistry." At the kind invitation of your distinguished president I shall try this evening to give a more practical value to the remarks then made by calling your particular attention to the mouth lesions from which infection can take place. Syphilis is a protean disease, not only capable of affecting every organ and tissue of the body, but also of imitating to a greater or less degree very many conditions and states depending on quite other causes. It is therefore no easy task to attempt to make perfectly clear its manifestations in the mouth—for it must be acknowledged at the outset that sometimes the appearances are so bizarre and curious that even the most skillful cannot be certain in regard to the nature of a particular lesion. It may be further stated that in order to diagnosticate syphilis surely it is often necessary to know the history and also to take into consideration very many signs and symptoms; it is not, therefore, always possible to consider and judge from a single lesion, whether it be in the mouth or on the skin, or in any other organ. It will be understood, therefore, in what may follow, that the diagnostic points indicated are but relative and partial, although the attempt will be made to indicate the salient points which may be of practical value.

In order to understand the danger from the manifestations of syphilis in the mouth and the means of averting it a few words must be premised in regard to the disease itself. Syphilis is a specific disease, due to the entrance of a special poison, which multiplies rapidly in the system and can affect every organ and portion of the body. It is by no means necessarily a venereal disease, but is constantly being acquired in perfectly innocent manners, which need not be dwelt upon here, except to state that a number of authentic instances are on record, by reliable observers, where it has been acquired in connection with the practice of dentistry; it has happened that both the dentist has acquired it from the patient and patients have acquired it through dental operations from poison which has been conveyed on instruments or otherwise from one suffering from the disease to another.

Soon after the entrance of the poison the person becomes syphilitic, and for a period is thoroughly permeated with the poison, so that the blood and certain secretions can again communicate the disease. The exact duration of the contagious period of syphilis



has never been determined, although it is known that after a considerable time the danger diminishes greatly, and after some years it is not communicable, even though the patient may have some of the late or tertiary signs of the disease, it may be, even in the mouth. The virulence of the disease is also modified greatly by efficient treatment.

During the first year syphilis is certainly very contagious, and operations about the mouth should be undertaken with the greatest caution. During the second year, as well as during the first, and especially in smokers, there are apt to be mucous patches in the mouth which give off a secretion which is abundantly capable of causing a chancre should it find a suitable opportunity. With each succeeding year, especially under proper treatment, the danger diminishes, and there are not many instances where infection has taken place after five years, although the disease is capable of hereditary transmission very many years later, showing that the virus does persist for even a long time.

The sources from which syphilitic poison may be received are four, and as all of them may at times relate to the practice of dentistry they may be mentioned. These are: (1) The initial sore or chancre in or about the mouth; (2) mucous patches in the mouth or on the lips; (3) syphilitic ulcerations, and (4) the blood. (1) The chancre. This is not very uncommon on the lips, and at the beginning is often thought to be only an innocent abrasion, or a "cold sore." But it will persist and gradually become a well-defined mass and give off a terribly virulent secretion, often remaining for months, and symptoms of constitutional syphilis will appear. Occasionally a chancre will occur on the tongue, as in the instance of a patient of mine, where the gentleman had been to the dentist to have a roughened tooth filed off; the dentist who did the work was undoubtedly exposed to the contagion, and without properly cleansing his instruments could have been the means of communicating the disease to others. Chancres are also not very uncommon on the tonsils, and also have been observed on the gums and elsewhere in the mouth.

(2) Mucous patches. These are slightly raw surfaces, of various sizes and shapes, which at one time or another are very apt to appear to a greater or less extent in the mouth in almost every case of syphilis. Mucous patches are a most fruitful source of syphilitic



infection, and are the lesions against which special care must be exercised. The secretion from them, whether in a fresh state or dried on instruments, napkins or any articles, gives rise to a chancre and complete infection of constitutional syphilis. Mucous patches differ so greatly in appearance and extent that it is difficult to describe them accurately. When newly developed they are of a redder color than normal mucous membrane, but later may become of a grayish white; elevated a little at first, they may become depressed by the loss of epithelial covering. They may be in oval patches of various sizes, or in streaks, while sometimes it is very difficult to determine their exact extent. They are always superficial lesions, and often do not cause much annoyance, so that the patient may readily attend to all the duties of life, and may go through considerable dental manipulation while having an abundant crop of mucous patches on the tongue, lips, or buccal cavity, as I have frequently known to be the case.

(3) Syphilitic ulcerations. These are less likely to be met with in the practice of dentistry, although I have known patients to seek relief for troubles about the teeth when there were syphilitic ulcerations about the mouth which could give rise to contagion. Generally they are so striking and painful that they would be noticed at once, or the patient would avoid dental work from the pain in them.

(4) The blood. During the earlier stages of syphilis the blood is certainly contagious, and if drawn in any operation it could convey the poison in a cut or injury, or if left on instruments or apparatus, and thus conveyed to another. In my former paper I quoted a very striking case where chancre of the gum resulted from the operation of tooth-drawing: the patient was undoubtedly inoculated by means of blood or disease secretions left on an improperly cleansed forceps.

Such being the sources from which infection can come from the mouths of persons who have acquired syphilis, we may briefly consider some of the details in regard to the methods by which the disease is communicated in dentistry, and the methods of avoiding the danger; first, in regard to the dental operator, and second, in regard to protecting patients. (1) The dental operator. Considering the well-recognized contagious character from mucous patches in syphilitic mouths, it is remarkable that there are so few instances on record of the infection of dentists, whose fingers are continually bathed in these secretions. It is undoubtedly due to the great per-

sonal care of the hands necessary in the profession. Physicians and surgeons have been much less fortunate, and numberless instances are on record where they have acquired chancres on the fingers from mucous patches. I myself have had over a dozen thus affected under my care. It is to be remembered that an abrasion of the surface is necessary for infection, so that these and even hang-nails should be carefully guarded against. Illustrations have occurred where even momentary contact of an abraded surface has sufficed to acquire the disease, even where careful cleansing has taken place immediately afterward; too great care cannot therefore be exercised in having the hands free from any raw places through which the poison could gain entrance. (2) Guarding patients against infection. It may seem somewhat out of place to speak to such gentlemen as compose this society in regard to the simple matters of precaution about to be mentioned. But as some may not heretofore have fully recognized the dangers arising from the syphilitic mouth, it is best to err on the safe side, and to briefly present the cautions which come to mind from a pretty full knowledge of the subject, and in doing so it will be necessary to repeat some of what was said on a former occasion.

The secretion from mucous patches, and also from the chancre, is very sticky and adherent, and when dried on an article forms a delicate coat, hardly perceptible. Nothing is known in regard to the length of time during which the virus is viable, but from what has occurred in medical practice it is believed that days, weeks, or perhaps months after an instrument or article has become infected it may again give off the poison and communicate the disease. Simple washing may not be sufficient for proper cleansing, and special care should be exercised if there is reason to believe that there has been particular exposure to syphilitic infection. This can be accomplished by heat and certain disinfectants, antiseptics, or germicides. As in the case of surgery, heat is probably the safest and most convenient disinfectant, and thorough boiling, especially in a slightly alkaline medium, may be considered as an efficient prophylaxis against contagion. I will not take your time in discussing other measures of asepsis, with which all are familiar, but I will only urge that too great thought and care can hardly be expended in perfectly guarding against this poison.

Almost all the articles employed in connection with dentistry

could be the means of communicating the disease; for even a blunt plugger which had been in previous contact with a syphilitic lesion, and bearing the poison on its surface, might slip and cause a wound of the soft parts through which the poison on it could be absorbed. But some instruments would be more likely to be the conveyors of the poison than others, and among these may be mentioned burs and files; they are both more liable to retain the poison in their fine serrations, and also to convey it to the tissues by wounds inflicted. Also the articles connected with polishing the teeth; and I well remember, in times past, more than one dentist polishing my own teeth with pumice stone on a bit of wood, which had apparently been used for former patients. Rubber-dams and wedges, if carelessly employed a second time, could also convey the poison. Napkins would probably be efficiently cleansed by boiling.

I have now endeavored to go briefly over the subject of the manifestations of syphilis in the mouth, and to point out some of the dangers from them to the operator and to other patients, and the methods of avoiding the danger. A few words may be added in regard to the practical recognition of syphilis in the mouth. First it may be recalled that, as was remarked at the opening of this paper, syphilis is capable of imitating many states or conditions dependent on quite other causes; and there are many alterations of mucous membrane about the mouth other than those of syphilis, with many of which you are undoubtedly familiar. Time and space would fail in an attempt to give any detailed consideration to these, and I must be content with a few suggestive hints. Aphthous sores within the mouth will sometimes be strongly suggestive of syphilis, and, indeed, it is not uncommon to find them in the mouths of syphilitic patients, where the stomach derangement has been caused by the treatment given for the syphilis. Glossitis of various forms and degrees may also exist and be confounded with syphilitic lesions; the serpiginous form, often called "geographical tongue," will sometimes be very puzzling. In the mouths of smokers, especially, we often get lesions which much resemble the white mucous patches of late syphilis; this *leucoplakia buccalis* is very apt to come in streaks and on the sides of the buccal cavity, reaching down to the corners of the mouth. The tongue may also be much affected with this disease.

In addition to these superficial forms of mucous trouble we have

epithelioma of the tongue or buccal cavity, which often simulates syphilis very closely; lupus may also affect the gums. Abrasions and ulcerations from sharp or irritating teeth will also be found on the tongue, and may be very suggestive of syphilitic disease.

Thus we see that the diagnosis of syphilis in the mouth may not be an easy affair, and it is necessary when any of these many lesions are found to be extremely careful lest the true nature of the trouble be mistaken and infection occur when least expected, as is usually the case. Hence the necessity of perfect asepsis in connection with dental work.

One word in regard to the connection of the physician with the subject under discussion. I believe it to be the duty of the physician treating syphilis to acquaint the patient with the dangers to which he is exposing others, and if possible to prevent dental work being done, certainly during the early, contagious period of the disease. Should necessity arise for the aid of the dentist, the patient should frankly acquaint him with his condition and the dentist take suitable precautions. Should doubt arise, the dentist should consult the physician in charge of the case. If the physician in charge of a case of syphilis in the contagious period should have occasion to send a patient for dental treatment, he should acquaint the dentist with the dangers involved, just as he would inform the obstetrician, surgeon, or any other medical man who might be exposed freely.

In conclusion, I beg to say that I have not wished to excite unnecessary alarm in connection with the subject under consideration; but having seen a great number of cases of syphilis innocently acquired, and knowing that in a large share of cases the sources of contagion came from manifestation of syphilis in mouth, I cannot too strongly emphasize the danger and urge most careful attention whenever there is danger that the disease may be communicated from this source of contagion.—*Dental Cosmos*, June, 1898.

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**MORE ABOUT THE MAXILLARY BONES.** By Dr. Edward M. Kettig, Louisville, Ky. Read before Kentucky State Dental Association, May, 1898. Those of you who attended the last meeting of this association, and saw the views of the internal structures of the maxillary bones, as exhibited by myself with the lantern, should have a very fair idea of this part of facial anatomy, and what

little I have to say on the subject here is only intended to lay more stress on two important conditions that play a part in our practice from time to time, and which I believe are not always fully understood by those attempting treatment of these parts. One of these localities I have selected is the opening from the maxillary sinus into the middle meatus of the nose, together with its relation to other openings and secretion of fluids and discharges. The other locality is the hard palate, conditions of cleft palate, in which I hope to explain how this abnormal condition occurs.

*The Antrum of Highmore.* As to the first proposition, I will say that the antral cavity is so constructed that its opening into the nose is situated at its upper and inner wall, and is often found in the roof of the sinus. This fact flatly contradicts the teachings of leading text books of anatomy, when they say that fluids from the antrum drain into the middle meatus of the nose, for our reason will tell us that if fluids or mucous should be found in the antrum more than enough to keep the surface moist, it would collect by reason of gravitation at the lowest part of the cavity, and in this way could pass only into the nose if the cavity should be filled to overflowing, and we would all be walking about with a water-bag in the hollow of our cheek. Fluids, then, I will say, pass only from the one cavity to the other in pathologic conditions where the antrum is filled to engorgement. Now while the antrum is constructed with a view toward preventing drainage, the other air-cells about these parts are so arranged as to form complete drainage, and while in normal conditions I do not believe that more fluid is secreted in the frontal and ethmoidal cells than suffices to keep the parts moist and lubricated, still we have all felt that sense of fullness about the anterior base of the cranium near the root of the nose when the mucous surface lining the frontal sinus and infundibulum become inflamed and undoubtedly secrete more than enough mucous, and it is discharged through the canal from the frontal sinus or infundibulum into the nose at the orifice of the maxillary sinus, in conditions ordinarily understood as "taking cold."

I do not believe that the mucous lining of the antrum takes on inflammatory action when congestion occurs, as in the case of taking cold, for it is the only cavity not provided with drainage, and would have no way of ridding itself of surplus fluids which the other air cells drain into the nose, and the nose through its natural outlets, an-

terior and posterior. While fluids from the antrum could pass into the nose in cases of engorgement, no fluids from the nose could get into the antrum, for the reason that the muciform process acts as a guard in front of the maxillary opening. It forms by its shelf-like process on the side of the middle meatus, the hiatus semilunaris, and protects the antrum from anything getting in from the nose. The infundibulum ends in this semilunar groove, and in pathological conditions might pass from the groove into the sinus, but only from the frontal and ethmoidal cells and not from the nose itself. With this supplementary explanation, in connection with the lantern slides as shown last year, I hope we will all more intelligently understand the treatment of antral troubles and its relation to the frontal sinus, together with possible complications of that cavity.

*Etiology of Cleft Palate.* Our second proposition was to explain how cleft palate occurred, and the changes found in the development of the maxillary bones under such conditions. We have all seen cases of cleft palate where such cleft deviated either to one side or the other with a usual tendency toward the left, and where one or more teeth were either found wanting or misplaced, without knowing just how the deformity was produced; for our text-books do not teach us these points, giving us no idea at all as to the developmental period of the palatal processes of the superior maxillary bones.

I have endeavored by means of the drawings to show the points of ossification in the palatine processes at times of development, but why a deviation from the normal during any period of gestation should occur, causing cleft palate, will always remain a matter of speculation and conjecture. The development of the superior maxillary bone commences so early and increases so rapidly that it is difficult to mark out its line of growth. It arises in membrane from four points of ossification. These are the orbital, nasal, alveolar and palatine. These appear about the sixth or seventh week of embryonal life and soon coalesce. Hence these parts are claimed by some to arise by one center. They form the lateral portion of the bone which contains all the teeth except the incisors, and is called by comparative anatomists the true maxilla. That portion of the bone which contains the lateral and central incisor teeth arises from a separate point of ossification, and is known as the intermaxillary or premaxillary. In many of the lower animals it remains distinct from the true maxilla throughout life. Where there is union be-



tween the two intermaxillary bones in the median line, but no lateral union between them and the true maxilla, they form the intermaxillary bones of lower animals. In man the intermaxillary bone soon unites with the maxilla proper by a suture which may be seen on the hard palate until about adult life. This suture extends back to the anterior palatine foramen.

In single or unilateral complete cleft palate, extending from the facial surface to posterior portion of palatine process, the premaxillary does not unite with parts containing other teeth, neither do the true maxilla and palatine processes of the palate bones unite. In double cleft palate the incisorial divisions may have united in the median line (forming a true intermaxilla), but not laterally with the true maxilla. In some of these cases the vomer can be seen protruding in the median line between the two halves of the hard palate.

We might say that fissure of the hard palate always follows an intermaxillary suture, of which there are five: One on the median line, one between each lateral and cuspid, and two additional between centrals and laterals. In early life there are four distinct portions of the intermaxillary bones, each portion carrying the germ of an incisor tooth. These parts all subsequently join the true maxilla by continuity of tissue, except upon the median line, where the two halves unite by suture. With this in mind, it is not difficult to account for the missing teeth in cleft palate cases.

The origin or causation of hare-lip and cleft palate are to be looked for among the prenatal influences, and are generally conceded to be faults in the developmental process. These influences to be operative must occur prior to the tenth week after conception. The formation of the maxilla begins at a very early period of intra-uterine life, and the extent of the fissure will depend very largely, if not entirely, upon the time at which the arrestation of development occurred; the earlier the period the more extensive the cleft, and vice versa. The fundamental influences, however, which underlie the causation of these defects in development have not yet been reached, but theory alone is our only guide in the matter. Faulty nutrition and heredity no doubt play an important part in these defects, but a condition known as "maternal impressions" is probably responsible for the greater majority of cleft palate cases. It is not resting to note in this connection that most women who are so



unfortunate as to give birth to deformed children, especially those with deformities of the face and mouth, feel very confident that it is the result of "maternal impressions" induced by fright, the sight or knowledge of a like deformity, etc. This may be true or not. When we know more about the influences which the nervous system exerts over cell life, the effects of the physical and mental conditions of the parents during the time of conception, and of the female parent during gestation, we shall be better able to consider the question from a scientific standpoint; till then it would be mere speculation.—*Items of Interest, August, 1898.*

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**CONSERVATISM IN ORAL SURGERY.** By Truman W. Brophy, M.D., D.D.S., Chicago. Read before the Illinois State Dental Society, March, 1898. Surgery of the oral cavity and its adjacent parts, including facial deformities, will ever be of great interest to the surgeon, as it not only requires high skill of the diagnostician, but unusual delicacy in manipulation is demanded in order to obtain good results and avoid conspicuous cicatrices and other deformities of the mouth and face.

It is my purpose to briefly state some of the reasons why the surgeon who has been thoroughly educated not only in medicine, but dentistry according to the curriculum of the modern dental college, is especially well qualified to enter upon the practice of this branch of the healing art.

It is customary for the general practitioner of surgery, when operating upon the maxillary bones or in the performance of operations within the mouth, when of considerable magnitude, to make external incisions in order to gain access to and a full view of the field of operation. I hold that these external incisions, followed as they are by the formation of scars, are in a large majority of the cases in which they are made wholly unnecessary. For example, a patient suffering from persistent neuralgia of the second or third division of the fifth pair of nerves, having undergone internal medication extending over a period of many months with only temporary relief, is taken by the physician to a surgeon for diagnosis and treatment. The surgeon decides that a nerve lesion exists and that an operation is required or indicated. The patient is prepared, the operation is proceeded with, and an external incision is made in accordance with the location of the lesion. If of the inferior den-

tal nerve, the incision is made along the border of the jaw, the tissues are reflected up so as to expose the external surface of the inferior maxillary bone, a mallet and chisel are made use of; the bone is chiseled away so as to expose the inferior dental canal, and the nerve removed. A saw is sometimes employed instead of a chisel for the purpose of removing the external layer of bone covering the canal. The wound is closed by suturing and the patient cared for antiseptically until the wound heals.

These external incisions are wholly unnecessary, as the operation may be successfully performed within the mouth with a moderate incision over the mental foramen, a small incision being made downward from the mental foramen, so that the canal may be entered with a silver probe. Then a drill, after the form of Gates' root-canal drill, exaggerated in size, may be carried into the canal and the contents thoroughly removed.

In order that the nerve may not redevelop as it is inclined to do, the canal may be drilled out so as to freshen the surface of the bone, thus causing the exudate to take place from the freshened bony surface, and the consequent filling of the canal with bony tissue. Experience has taught us, however, that the canal does not always fill with osseous tissue and the nerve will be reproduced in certain cases.

I am of the opinion that there is no more reason for making an external incision for the removal of the inferior dental nerve within the substance of the maxillary bone, than there would be to make an external incision through the cheek to obtain access to a third molar tooth for the purpose of entering the pulp-chamber and removing the pulp therefrom.

Abnormal conditions of the second division of the fifth pair of nerves, or the infraorbital nerve, frequently require surgical operations for their cure. It has been customary in performing these operations to make external incisions for the purpose of entering the infraorbital foramen and making exsections of the nerves. I have found that equally good results may be obtained by raising the cheek, making an incision over the cuspid tooth, dissecting up the soft parts, seizing the nerve with a tenaculum as it makes its exit from the infraorbital foramen, carefully dissecting out its branches distributed to the cheek, thence increasing the size of the infraorbital canal by means of a drill, seizing the nerve, drawing it

forward and dividing it, which accomplishes the same end that may be gained by making an external incision.

Operations for the removal of tumors of the oral cavity of various kinds may also be performed without external incisions. The tumor known under the name of epulis, occurring as it does about the margins of the gum, but having its origin in the periosteum and growing sometimes to an enormous size, may be removed in all cases within the mouth without external incisions.

The method of procedure in removing tumors of the superior maxillary bones has been to make an incision usually either through the median line of the lip to the septum of the nose, thence around the ala of the nose to the inner canthus of the eye, thence to the outer canthus of the eye, dissecting up the cheek, reflecting it backward; or to carry an incision from the angle of the mouth to a line midway between the lobe of the ear and the angle of the jaw, and then to proceed to remove the superior maxillary bone together with the tumor through the incision made. I have found that such a procedure in a large majority of cases is unnecessary. Tumors, especially of the sarcomatous or carcinomatous type, by no means always affect the bony tissue of the hard palate except by absorption of that bone by contact and pressure. Especially is this the case in the formation and development of giant cell sarcoma, a tumor so frequently met with in and about the oral cavity.

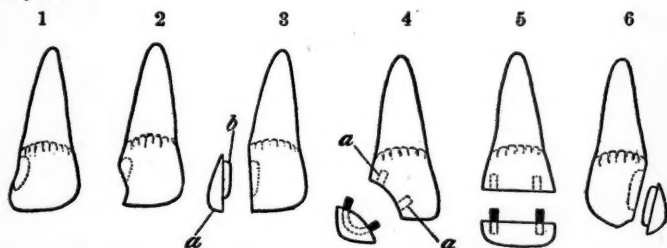
Three times during the past four months have I found growths of this character involving the nose, all the space occupied by the antrum of Highmore extending back into the sphenoidal fissure from which they often have their origin, and I have successfully removed them by making incisions within the mouth, over and immediately beneath the malar process of the maxillary bone, carrying them forward to the median line, dissecting the tissues away and thus reaching the great mass of the growth. With properly formed and suitable sized curettes these growths were removed, and the parts, so far as time would allow us to judge, have assumed a normal condition, as there has been no recurrence to date of these growths in any one of the three cases referred to. In one case in particular a marked absorption of the maxillary bones had occurred, leaving only the soft parts between the oral surface of the soft palate and the tumor lying upon its surperior surface. So extensive was the destruction of the bone in this case that that which was the sum-

mit of the vault was depressed or carried downward by the tumor so as to be on a line with the occluding surfaces of the teeth. In order to make this operation without the loss of the teeth, and without the loss of the palate, it became necessary to construct a splint of metal, made by swaging it with dies, so as to make it fit the surface of all the teeth of the upper jaw. This splint was cemented into place, the patient dismissed until the following day, when the operation was made of removing the tumor. The teeth were so loose that some of them might easily have been removed by the fingers. The split, however, supported and held them firmly in place, and the tumor was removed. While the cavity has not yet filled, the parts are in an apparently healthy condition and the teeth have become quite firm. This dependent part of the palate, caused by the pressure of the tumor, contracted and finally resumed its former shape. The palate is restored, and the articulation of the patient is in no sense impaired. If, however, the usual course of operative interference had been adopted, the patient would have been deformed through life.

In cases of osseous tumors, involving the greater portion of the maxillary bones, it is often expedient to remove them without external incisions. The superior maxillary bone may be removed within the mouth and without any external incision whatever. Necrosis and caries of the bones may be removed easily within the mouth. On several occasions I have removed one-half of the inferior maxillary bone without external incisions. In a case of necrosis I removed the entire inferior maxilla within the mouth. This, however, was a comparatively easy procedure as there were no attachments that were difficult to release. It is needless to say that tumors of the lower jaw may be more easily removed than tumors of the upper jaw, as better access to them through the oral cavity can be secured. It may be well to urge upon all the great advantages to be obtained in the treatment of fractures of the maxillary bones by the adoption of internal splints, and the dentist's ability to manipulate metals in the construction of regulating appliances, crowns, etc., is well adapted to the construction of apparatus or splints for the treatment of fractures of the maxillary bones. The application of external splints and bandaging, even skillfully applied, is very inefficient in accomplishing the work desired in securing a good adaptation of the fragments and restoration of normal occlusion of the teeth.—*Dental Review, August, 1898.*

**RESTORATION WITH PORCELAIN IN FRACTURE OF THE TEETH.** By Dr. L. Foster Jack, Philadelphia. Read before the Academy of Stomatology, March, 1898. I present a few notes and a diagram or two from which I hope to demonstrate the use of porcelains for the restoration of teeth that have been fractured. The method to be described is particularly directed in its application to those cases wherein the vitality of the tooth has not been disturbed—that is, where the pulp has been but slightly or not at all encroached upon.

The use of porcelains is especially called for in fractures occurring in the superior incisors, but they may be useful as far back as the anterior surface of the first molar. Preeminent stands the central incisor, most subject to fracture, either by a blow, a fall, or in ordinary use.



To be brief, we will turn to the diagram (Fig. 1). Here we have a left central weakened by decay on its mesial surface. The enamel, having been robbed of its support, is weakened and becomes frail. Its possessor bites upon something unusually hard, breaking away the corner, leaving an unsightly gap. (Fig. 2.) To remedy this defect now becomes our task. It is simple but tedious, for the parts are small, and it requires exactness to be rewarded with a good result.

The first step in the operation is to cut the irregular walls formed by the fracture and cavity in a direct line from the cutting edge to the cervix (Fig. 3), grinding at the same time both the labial and lingual walls to the same plane, thus making a flat and even surface, with the exception of the cavity in the upper central portion. This is accomplished with a corundum or carborundum disk, one side of which is flat.

The next step is the preparation of the cavity. After the removal of all decay and softened tooth-structure the cavity is extended as

far towards the cutting edge of the tooth as is compatible with strength, but is not made deep, care being exercised to avoid the pulp. The edges of the cavity are but slightly undercut. The floor should be nearly flat and convex if encroachment upon the pulp is feared. If the pulp is in danger it should be protected from pressure, which may be exerted at a subsequent stage of the operation.

The tooth being now prepared, we proceed to the formation of the porcelain counterpart. The cavity in the tooth is lined with platinum foil; this is carefully removed, filled with porcelain body, and the latter fused in the Downie furnace. After stripping off the platinum the porcelain body is then placed in the cavity and ground flush with the walls.

An all-porcelain tooth-crown of appropriate color, and corresponding in form and size as nearly to the natural tooth as possible, is selected. From this we cut with a disk that portion which is desired for substitution. This is ground on the lathe until it is sufficiently diminished in size to correspond to the absent part of the tooth. The grinding is done principally upon the straight side, and it is not necessary to cut the labial surface if the tooth-crown has been well selected.

The relation of the outer porcelain (*a*) and inner, or retaining porcelain (*b*), is obtained by temporarily fastening the two together with wax and fitting them to the tooth. The wax is then replaced by a thinly mixed layer of the porcelain body and the two parts are fused together in the furnace. The piece is cemented to place, finely fitted and polished.

Fig. 4 represents a case of fracture of the distal portion of a right central incisor, one which would probably only occur in a child from the result of a fall. In this case the preparation of the tooth is a simple operation. The line of fracture is made free from all irregularity and the curve trued. Two pits are drilled at the points *a*, *o* to the depth of one-eighth of an inch, in diameter large enough to freely admit No. 19 standard wire. It may be found necessary to enlarge them laterally at the opening to receive the retaining posts. The substitute is selected and cut from a tooth-crown as described in the foregoing case. It is then deeply grooved, with a diamond-shod disk, from the contact surface inward, forming an opening semicircular in form. Into this a piece of No. 19 stiff



platinum wire is fitted, the ends being allowed to protrude one-eighth of an inch. The groove is then filled with porcelain body and fused. It is then ready to be cemented into place.

Fig. 5 indicates a straight fracture involving the incisal third of a central or, more frequently, a lateral incisor. The procedure in the preparation of the stump is the same as in the case preceding. The porcelain tip is also formed as in the last operation, with the exception of insertion of the retaining posts.

For the case under consideration a diamond-pointed drill becomes requisite, for the purpose of forming two pits for the reception of the retaining posts. These are of platinum and are retained by fusing as was the wire in the previous case.

Bicusps and molars, in which the mesial and a portion of the buccal surface has been lost (Fig. 6), can be restored in the way described for the proximate surfaces of incisors.

It must be evident to all that the chief advantage of the method, if it has any, is in the fact that the porcelains can be ground to fit perfectly without the hindrance of pins or posts. Also that the porcelains are not baked for individual cases, but are selected from tooth-crowns in stock, thus obviating the uncertainty in color; the method enabling one to select a shade and form as nearly perfect as possible. Crowns best suited for the purpose are those of a fine texture, as they can be ground and polished to fit any irregularity and because there is less color-change than in the more porous bodies. By this I mean that there is often a surprising change manifested in the color of a porcelain after it has been set, due probably to the reflection and absorption of light. In this connection the selection of cement is an important consideration, for the porcelain can be varied a degree or two in shade, either lighter or darker.—

*International Dental Journal, August, 1898.*

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#### BRIDLE FOR THE CONTROL OF MOUTH-BREATHING.

By N. B. Jenkins, M.D., Knoxville, Tenn. Mouth-breathing is probably coexistent with 50 per cent of the diseases affecting the larynx or pharynx, and possibly with a greater per cent of catarrhal affections of the nose and middle ear. It plays a more important part in diseases of the respiratory, olfactory, auditory, and gustatory organs than casually might be supposed.

It may be observed that patients afflicted with adenoids, stenoses,



hypertrophied tonsils and turbinated bodies, ecchondroses, nasal polypi, and with other obstructions of the nasopharyngeal air passages, do not during sleep respire through the nose. In most cases a discontinuation of nasal respiration is an enforced alternative, there being present some form of obstruction. It may be due to a habit of breathing, resulting from some former temporary encroachment on the air passages of the nose and pharynx. On the other hand such obstructions often appear as the results of the non-use of the nose in respiration.

Let me describe a bridle which from successful experience is offered as a corrective of the above-mentioned injurious habit. This device is made of four strips of cotton webbing one inch wide and commercially known as "stay binding." It has but one fastening, which may be a button, safety-pin, buckle or knot. The bridle should be adjusted to the head of the patient by the use of pins and then removed and stitched as soon as fitted. The cost of this bridle is five cents. It can be fitted in two minutes. The fit should be sufficiently loose for comfort and after a few nights' use it may be tightened if necessary.

The primary result of the use of this contrivance is a noticeable change in the cleanliness of the mouth on awakening. This is largely due to the absence of the products of microorganisms in the saliva. When lodged in the secretions of the sleeper's open mouth they find favorable conditions for speedy propagation. In high dry altitudes the results are less marked, because of the freedom of such atmospheres from all forms of bacteria.

In nasal catarrh (provided there is no sinus complication) a perceptible decrease of the secretion will speedily follow the use of the bridle. The hypertrophied tonsil frequently resumes its normal condition, and adenoids occasionally disappear after the continuous use of this bridle for a few months. Catarrh of the middle ear is of frequent occurrence in mouth-breathers, and in many instances may be permanently relieved by the use of the bridle in connection with the customary treatment. Morbid conditions of the pharynx and larynx are always benefited by a resumption of nasal respiration. All such obstructions as enchondroses, polypi, deviating septa, exostoses, etc., claim the attention of the surgeon, and after his work with the knife the ordinary nasal detergents should be used for a few days prior to the wearing of the bridle. The metal dila-

tors of Dr. Lenox Brown, in such cases as they are recommended for, will greatly facilitate the acceptance of this mechanism and the return to nose breathing.

A mild carbolized solution of cocain injected with an atomizer into the nasal cavities before retiring will increase their caliber and may be used with good effect by the patient while becoming used to the bridle.

As a prophylactic measure against the contraction of pneumonia, bronchitis, and other respiratory diseases which attack the great masses who sleep in cold and damp bedrooms, enforced nasal respiration with the use of the bridle should prove valuable. No better demonstration of the injurious effects of an improper moistening and warming of the inspired air can be made than the study of exaggerated cases of hare-lip and cleft palate, which usually in early infancy contract some fatal form of respiratory disease.

The cosmetic effect of nasal respiration is not to be overlooked. In childhood the protruding jaw, thick lip, atrophied nose, and other facial deformities, can in many cases be relieved or prevented by the timely use of this bridle.—*Medical Record*, Sept. 10, 1898.

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STUDY OF EUCAIN "B" IN STOMATOLOGY. By Dr. A. Legrand. Read before the "Societe de Therapeutique," Paris, June 22, 1898. The results recently obtained with eucain "B" in general surgery by Dr. Reclus, and communicated to the Academy of Medicine at its session of March 29, have led me to make important modifications in the use of that drug in stomatological work.

Instead of the 1 per cent I employ a 2 per cent solution; this is absolutely free from danger, and permits operation to be undertaken very quickly. Analgesia sets in immediately, and there is no necessity of waiting for five minutes, as is the case with the weaker solution. This is no slight advantage for the patient. Further, we can operate in the upright position without the least fear of trouble, and we can allow our patient to walk out immediately after the work is done, which is not possible with cocain.

The following points seem to me to be important enough to attract the attention of stomatologists. Without going into the technique that is to be followed in order to obtain proper analgesia, I will only say that the injection of 1 cubic centimeter (17 minims) *i. e.*, 2 centigrams or  $\frac{1}{3}$  grain of eucain "B" is sufficient in the majority of

cases to permit the extraction of a large molar without the patient suffering any pain. If this dose should appear insufficient, there need be no hesitation in injecting a larger quantity of the anesthetic solution. Immediately after the injection the diseased tooth can be removed. Dr. Dumont and I have operated over sixty times by this method and our patients have never experienced any pain.

To study any postoperative troubles that might appear, our patients were made to walk up and down in the yard of the hospital immediately after the operation for from five to eight minutes at a moderate gait; then they were taken into the office and examined. We have never been able to find any change in their general condition, nor have we ever found them show that anxiety and pallor which is seen after cocain and more especially after holocain.

Our observations were made upon patients of both sexes and of all ages. Thus, in a child of 12 years we extracted the second molar of the left side of the lower jaw, after having injected into both sides of the tooth  $\frac{1}{4}$  cubic centimeter (4 minims) of the 2 per cent solution of eucaïn "B." The anesthesia was perfect and no trouble followed the operation. We have done extractions upon hysterical women and nervous men without the occurrence of anything abnormal. In one young man, 22 years of age, we removed four roots at 1 sitting. Analgesia was obtained by injecting two syringefuls of the 2 per cent solution, about 4 centigrams ( $\frac{3}{8}$  grain) of eucaïn. The patient experienced no discomfort, though seated, and felt none after he had taken the short walk that we prescribed. For the above reasons I agree with Dr. Dumont in considering eucaïn "B" in 2 per cent solution as the anesthetic of choice in stomatology.—*Revue de Therapeutique, July, 1898.*

DEFECT OF BOILED WATER.—We are often told that in making tea the water should be poured on at the moment of beginning to boil, if the vivacity of the infusion is to be preserved. The reason is that every moment of boiling disengages the fixed air in the water, in every bubble that rises and bursts on the surface, until the residuum is devoid of the inspiriting element, free oxygen, as well as of the useful element, nitrogen. An exchange says: "The proof of this may easily be seen. If fresh cold water be used, the first time it boils it will lift the lid of the kettle and conduct itself in an uproarious manner, boiling over and trying to put the fire out. It is when in this state that it is good for making tea. If you put it on the fire again you will find you cannot get it to boil over a second time, still less a third."—*Modern Medical Science.*

## Letters.

### BALTIMORE LETTER.

*Dear Digest:*

BALTIMORE, September 12, 1898.

We have sometimes wondered why the preacher, the lecturer, or the teacher should consider himself a hard-worked man, but since our obligations to the *DIGEST* have matured so promptly each month, we are almost inclined to wish we were as prolific as a rabbit or a pigeon, that our offspring might go forth each month without effort. A little girl sent after milk returned with an empty can, and responded to the inquiry why no milk, "I guess the cow didn't lay any to-day." So we feel upon a survey of the field. Eggs are scarce and orioles are not leghorn chickens. Our Baltimore dentists have been scattered for the last two months in search of pleasure and health. While Baltimore with its numerous resorts is not a bad place in which to spend the summer, still we all look forward to and enjoy the respite from the calls upon time and patience which sap our energy and weary our fingers and brains. The bracing atmosphere of the last few days will bring us back with renewed zeal and the responsibilities of life will weigh lighter because of the outing.

The colleges are beginning to show signs of activity, students are coming in, and boarding-house keepers are sharpening the hash-cutters (\$2.50 or \$3.00 per week doesn't buy oysters and terrapin even in Baltimore), and altogether hash and the dressing that goes with it is not half so bad as hard-tack. So let us hear no fault-finding; this war has taught us many lessons.

With the coming of the candidates for hash and dental instruction one cannot but wish that their preliminary test were in the hands of some public official, such as the superintendent of public instruction, so that the temptation to admit those unable to fulfill the demands would be removed from the schools. Not that we attempt to say that men of meager attainments are absolute failures as dental students, but the standard which has been raised should not be deviated from for pecuniary reasons.

The training of American dentists in the past, when no preliminary requirements were exacted, has not been a cause of reproach

or shame to the colleges. The graduates of American colleges of dentistry have stamped their impress of superiority in all the countries of the world. Why? Not always because they were men of liberal education or culture, but because their practical training and instruction fitted them to do superior work. The book which created the greatest sensation in educational circles in France this year was a work by a Parisian editor, entitled "The Secret of the Superiority of the Anglo-Saxons." The comparison was between the Anglo-Saxons on the one hand and the French and Germans on the other. The "secret" alleged was the superior adaptation of English and American educational methods to form *efficient and practical individuals*. This has been the secret in American institutes of dentistry—the graduate is a *dentist*.

We note with sorrow that the Washington City Dental Society has by vote stricken from the roll of honorary membership the name of a man 87 years old, whose creditable record is indissolubly linked with the history of dentistry. As culture advances respect for age and honorable past should increase. What mean these vandals by defiling and destroying the landmarks of our profession? Fie! Shame upon such recklessness!

There is a screw loose in New Jersey; the moral and ethical tone of society work is lowered by the disgusting sanction of secret nostrums, and the whole State Society is about to be turned over body and soul to Homeopathy and Christian Science. Has the Jersey mosquito failed to draw off the excess of impurities generated in that climate, or has man with his ingenious inventions and love of ease planned to escape the provisions of Nature? We hope for better things from New Jersey in the future.

Cordially yours,

ORIOLE.

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### PHILADELPHIA LETTER.

*Dear Digest:*

PHILADELPHIA, September 20, 1898.

Among the events of the month were the meetings at Omaha of the National Dental Association and the National Association of Dental Faculties. The Faculties had a satisfactory convention and admitted three new schools, located in San Francisco, Denver and Pittsburg. They also extended the session to three years—one term of seven months each year—after this year.

The National got to work promptly on Tuesday, August 30, as

arranged. A very hearty reception was tendered the body by the mayor of the city. This was responded to by Prof. James Truman, of Philadelphia, in his happiest mood, so of course it was well done.

The president's address was next in order and contained some timely suggestions and advice, and was referred to a committee for future report.

Every session heard some papers, but they were not much in evidence this year. Discussion was at times spirited and interesting, and although the session closed on Thursday instead of Friday, in consequence of the heat and its influence on enthusiasm, the meeting was not without profit.

One of the most pleasing incidents of the Omaha gathering was a dinner tendered Dr. H. J. McKellops on August 31, that date being his seventy-third birthday. This compliment was extended by Dr. C. E. Smith, of Omaha, who invited a number of Dr. McKellops' friends to participate, and among them were Drs. Taft, Peirce, Harlan, Barrett, Fillebrown, Crouse and others. There were some interesting informal talks given, and altogether it was a very graceful tribute to a worthy and faithful member of our profession. Dr. McKellops has practiced dentistry for fifty-four years, most of the time in St. Louis.

Another incident, which while lively was not so pleasant, was our attendance, by invitation of a local dentist, at the initiation exercises of a secret society—the Ak-Sar-Ben of Omaha. It was a hot evening and the rooms in which we were seated reciprocated. There was much hair-raising and we might say hair-splitting ceremony, and goat-riding seemed to be in the ascendency. All whom we heard express themselves concerning it felt that it was lacking in dignity for professional men to participate in such exercises. We were surprised to see some of our good Chicago brothers and one from our own Quaker City going through the grotesque ceremony. They were fortunate not to have any bones broken and will certainly carry bruises about their anatomy for some time to come.

There were a number of Philadelphians present at the Association meetings, prominent among whom were Profs. Peirce, Truman and Guilford; more should have been there and thus shown interest in professional affairs. New York City was very slimly represented and the editors of the *Dental Cosmos* and *Items of Interest* were conspicuous by their absence.



Another matter we particularly note this month is a contribution by Dr. E. K. Wedelstaedt in the *Items of Interest*, criticising Dr. Clapp's chapter in the American Text-Book of Operative Dentistry. This criticism relates principally to methods of practice and terminology. The former are largely deserving, we think, but as to the terminology it seems to us Dr. Wedelstaedt "strains at a gnat" a great many times, and his endeavor to be nice and precise is frequently humorous. Dr. Ottolengui effectually answers his paper in the editorial columns.

Since our last letter we have carefully gone over Prof. Barrett's new book on Oral Pathology and Practice. It is written in his wonted manner—clear and concise—the author being one of the clearest thinkers and writers in the dental profession. We cannot agree with Prof. Barrett in all his theories, especially those on "Diseases of Dentition," but taken all in all we think it is the best work on the subjects treated for students' use now extant.

Cordially,

THE SPECTATOR.

### NEW YORK LETTER.

*To the Editor of the Digest,*                      NEW YORK, Sept. 19, 1898.

MR. EDITOR: *The Dentist*, London, gives a dig at the veteran dentist who advertises to sell out his practice after many years of active devotion to it. "A good opening for a young man, terms cash."

Cotton cones are good things and we have used them for many years, and lately mentioned the fact in the *Dominion Dental Journal*. We notice a fellow dentist in the same journal tells how nice his cotton cones are.

For nearly seven years we have used cocain solution, locally applied to the soft tissues with our finger, and have never seen the slightest difficulty occurring. Dr. Harlan's case must have been idiopathic.

A new practice is being advocated—dental decay dealt with by medicines—this may be possible.

Dr. Biro's resumé, found in the September *Items of Interest*, of the work of Drs. Black and Williams, is really refreshing. We Americans are hardly able or willing to deal so fairly with each other's work, but we are not to be left without witnesses of fair treatment of what men put forth with honest purpose. How few men keep back their true dispositions in dealing with one another.



We call attention to Dr. Kirk's article in the August number of the *Cosmos* concerning abcess on teeth with living pulp, a subject as yet but little written upon. We first notice his remarks concerning the phenomena attending the evolution of this condition. He states that inflammation is somewhat modified as to violence. While this is frequently true in the initial disturbance, often it will become intensely violent. The truth of this is confirmed by personal suffering and by a goodly number of cases in practice. Here we would call attention to Dr. Nash's views of the initial manifestations by a slight uneasiness at the apex. He has given much suggestive thought concerning the early uneasiness of the tooth, and Dr. Kirk has made some use of his terms and line of thought. The term "autointoxication" is brought forth and he goes largely into what makes up this form of self-intoxication, mentioning the excessive use of coffee, tobacco, etc. Dr. Kirk says that a storage of toxic conditions takes place, and not being eliminated frequently produces serious effects. He leans strongly toward the gout theory, taking the ground that it is the disturbance of the synovial fluid, and this produces an erosion. He concludes that the "line of least resistance" often produces an outlet at the gum margin. We think this is sound reasoning, and have gone on record that the initial disturbance is formed in the pulp tissue, originating from many kinds of nerve disturbance. More such papers as Dr. Kirk has given us will stimulate intelligent and much-needed thought on this subject. With our present enlightenment there is not much necessity of removing a tooth found affected with this particular affliction.

One conclusion is settling down upon our minds—that we are coming to the truth regarding the formation of the so-called pocket or sinus. While this will conflict with much former belief, it is gratifying to relinquish any idea if we think there is a truer one. We are satisfied that the formation of the sinus or pocket is produced by pulp irritation, but always only at the apex, yet we believe that the irritation commences in the pulp-chamber. With destruction of the pulp the difficulty is at an end, certainly so far as pain is concerned, and with favorable conditions the firmness of the tooth is secured. Our method of procedure has been after destroying and removing the pulp, not to rest there, but to make an opening through the foramen and force cauterizing medicine through. This finds its way along the track that the pus has followed, and as can be

readily seen, secures a definite application of the remedy to the disordered parts

What can be said concerning dental parlors? Are we a liberal profession? Can there be claims for being professional? We hear so much of legislation; knowledge is of greater power for success with patients than any substitute.

Let the man who defames such a useful practitioner as the late Dr. Evans be buried in oblivion, even though he does get his privilege through the columns of the *British Dental Journal*.

Drs. Spaulding and Barclay of Paris, and Dr. George Field of London, were in New York during September.

We learn that there is to be no code of ethics in the new National Dental Association. We think this true progress.

We see so much regarding the dividing line of medicine and dentistry. Nonsense! No one can practice dentistry without practicing medicine, if done intelligently.

A bequest of one million and a half dollars for a medical department in connection with Cornell University, to be established in New York, is attracting much attention, and there seems to be prospect of a sort of teaching which we have emphasized, namely, teaching small classes over the patient. We marvel that some one at least of our schools does not adopt it. Is it possible, as has been charged of late, that our schools are in bondage to commercial competition, and stand in fear of each other? We see a little hope that the late Dr. Evans' estate will ultimately develop the above mentioned plan. Cordially,

NEW YORK.

**EPITHELIOMA OF THE FACE SUCCESSFULLY TREATED BY SWABBING WITH ARSENIUS ACID.**—At the Society of Dermatology, March 10, Dr. Hermet showed a patient who in October, 1897, was found to have epithelioma of the face. Arsenious acid was applied, the surface of the ulcer being left exposed to the air after the method of Czerny. The new growth was destroyed by the early days of January, 1898, and cicatrization was completed by February. The patient had previously been treated with chlorate of potassium without the slightest benefit. Czerny's method, employed by Dr. Hermet, consists in using three solutions of arsenious acid in equal parts of water and ethylic alcohol. The first solution, of the strength of 1 to 150, is applied to the ulcerated surface. The second and third solutions, which are stronger, are applied to the scab. The ulcer is swabbed with the solution every day and excessive pain is kept in abeyance by hypodermic injection of morphine. When the scab falls off the raw surface is treated as an ordinary wound.—*Lancet*.

# The Dental Digest.

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## Editorial.

### FIRST ANNUAL MEETING OF THE NATIONAL DENTAL ASSOCIATION.

Considered from any standpoint the recent meeting can hardly be called a great success. The attendance was as large as could be expected when it is remembered that Omaha is a long distance from any large center, but the impression was quite general that the hotel accommodations were inadequate, and this incorrect rumor probably kept many from attending. The chief cause of the poor attendance, however, may be safely ascribed to the war and the hard times attendant thereon, for the entire country has been at a standstill, business, literary work and every interest being affected, and the section work was therefore much neglected. Although the executive committee sent letters to the officers of the different sections, calling attention to the fact that it was expected of them that reports would be ready, and notwithstanding the fact that the chairmen of many of the sections made special efforts to obtain material for reports, the responses were never so meagre. Taking into consideration the intense heat and all the drawbacks which were present, the only wonder is that the meeting turned out so well as it did.

After surviving all it did in its first convention, the National Dental Association will surely prosper under the more favorable conditions which are in store for it in the future. The greatest good must come through the work of the sections, and while time and space will not permit us to discuss the question here, we intend to devote a series of editorials to the need, scope and possibility of section work.

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### REMOVAL OF THE DENTAL PULP.

This month we publish an article upon this subject by Dr. B. Holly Smith, who deals largely with what he terms the evil effects of arsenious acid for devitalization of the pulp. A careful perusal

of the paper will show that the author attributes pericemental disturbance to the effects of arsenic. He quotes from an experience of sixteen years, during which time he has not seen a case of pericemental inflammation or abscess where the pulp has been removed without resorting to the use of arsenic. To avoid this pericemental disturbance the author abandons the use of arsenic and uses cocain applied with a current of electricity—cataphoresis. In the discussion several speakers gave their experiences and methods, some using cocain without cataphoresis and others employing various schemes to extirpate the live pulp. The weight of argument agreed with the proposition that arsenious acid is the cause of pericemental disturbance in pulpless teeth.

It is always gratifying to find the profession looking for the best method of procedure, and while this discussion was not new and most of the points had been given before, the several views were not offered in so dogmatic a manner as has characterized most of the previous discussions on this subject. We now wish to comment on the theory there propounded, as we do not agree with it. In an observation of over twenty-five years we cannot trace a case of pericemental disturbance which could be attributed to the action of arsenic at the end of the root. We have, however, had severe pericementitis where some of the arsenic escaped from the cavity and came in contact with the membrane at the cervical margin of the cavity. We could safely attribute the disturbance to the arsenic, there being certain evidences of its action on the gums. Other than this we have never had a case where the pericemental trouble could be traced to arsenic. In fact, the cases which have given the most trouble have been where arsenic was not used, but where the pulp had previously died and the sepsis resulting has caused varied degrees of inflammation.

If after the pulp is destroyed by arsenic it is carefully and entirely removed, some antiseptic being used in connection with the operation, and the root immediately and very thoroughly filled, the filling so placed as not to irritate or cause inflammation, there will be an absence of any pericemental disturbance or abscess.

We believe one fertile source of trouble is the use of gutta-percha for root-filling, both the dissolved and the points which are now so generally used and which are apt to cause irritation at the end of the root. The disturbance from the use of gutta-percha is due to

two causes—forcing air ahead of the filling, which is not allowed to escape because of the plasticity of the gutta-percha, and forcing particles of gutta-percha through the apex. We have heard of methods of procedure with this material described, evidence that it had gone to place being indicated by a slight pain felt by the patient, when in reality the compressed air will produce an equally disturbing symptom, and so such evidence is entirely worthless.

We have also seen acute inflammation caused by the air forced ahead of the gutta-percha, the trouble dating from the time when the filling was first inserted, and when evidence that something had gone to the end was distinctly given by the patient. A careful examination afterward revealed the fact that the gutta-percha had not reached to within one-quarter of the end of the canal. In other cases we have had positive proof that the operation of filling had been so thorough that some of the gutta-percha went through the end of the root, and the tooth thus treated had been a constant source of trouble from no other cause than the irritation of this material protruding through the apical foramen.

While the pulps of the six anterior teeth can be anesthetized and painlessly removed without the use of arsenic, such procedure is not applicable to the molars nor scarcely to the bicuspid. We believe even the single-rooted teeth can be treated quite as safely with arsenic, and that when trouble arises it is usually traceable to other causes.

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### A RETROSPECT.

"One of the dramatic things happened at Omaha when Dr. J. N. Crouse placed his resignation as a member of the executive committee before the meeting. He said that the president told him he ought to resign, and therefore he did it. Some one moved that the resignation be laid on the table, which was done. Not more than four or five voted out of thirty-five or forty present. We think he should have persisted and resigned. There are others fully competent, and they are not running dental depots. It is a very embarrassing position for a dental dealer to be directing the business affairs of a dental association; and we wonder why the doctor does not step aside. Such a feeble endorsement as he got at Omaha is not very encouraging. No one is more willing to accord praise to him for his work in the D. P. A. than the writer, but now that he has personal, public interests in the dental supply business he ought to leave the matter to the judgment of his friends and retire from such conspicuous society work and stay in the ranks. We feel sure that the asso-

ciation would do better to have an outsider do its business. The meeting this year was not a success numerically or from a literary standpoint, due, as we have said, to the dilatory methods of the executive committee. If the next year is not better managed or advertised we will feel called upon to criticise the executive committee more severely than we have in the past. We are for the success of the National Dental Association first and last, and men can take care of themselves."—*Editorial in September Dental Review.*

We ask our readers to carefully study the above, not that we care for the personal criticism, but because there is a vital question involved. For some time there has been much vicious falsifying and misrepresentation in regard to our connection with the supply business, and it is therefore important that the men who honestly desire to see the best possible things done for our profession should understand the true situation.

The facts are as follows: While we are actively engaged in the practice of dentistry and this is our sole means of livelihood, we are at the same time attempting to band the profession together in an organization which shall have the elements of greater permanency than are possible in the Protective Association alone.

Without going much into detail regarding the plans of the Dental Protective Supply Co., suffice it to say that it is our earnest and honest conviction that this movement is destined to be of the greatest possible benefit to us as a profession, giving us independence and a commanding position not faintly understood as yet by the great majority of dentists, and making it possible for us to control our supplies and legitimate inventions, and to stop the patent abuse and many of the objectionable business methods now in vogue. Greater than all other considerations, it will band us together as can be accomplished in no other way, because of the material interest and ownership each member will possess. This cooperative supply movement therefore presents possibilities of the greatest importance for the betterment of the dental profession, and although only in its infancy its influence is already working much good.

From the fact that such an enterprise interferes with the interests of those who have had full sway and who now see a menace to themselves, a strong and organized opposition has been waged against it, and all sorts of slanderous stories and malicious falsehoods have been told about us personally to the individual practitioners throughout the land.



Despite the fact that we have gratuitously given our best energies to this work and have furnished a large per cent of the necessary capital, thereby demonstrating to the profession the genuineness of our sentiments and the feasibility of the undertaking, the editor of the *Dental Review* sees fit to style our labor "personal, public interests in the dental supply business," and advises us to retire from "conspicuous society work and stay in the ranks," because he "feels sure that the association (National) would do better to have an outsider do its business."

It should be remembered that Dr. Harlan is a paid editor and is employed by H. D. Justi and Son, who are one of the leading firms in the combination. Members of the Dental Trust naturally do not wish this cooperative movement to succeed, and so of course Dr. Harlan must do their bidding. We think our readers will readily see that he is not voicing the sentiments of the profession, but is merely one of the mouthpieces for the trust.

As regards our resignation from the executive committee, we fear Dr. Harlan is not wholly disinterested in his good wishes for the success of the National Dental Association. We resigned some years ago, being weary of the duty, and assisted in having Dr. Harlan elected chairman of the executive committee in our place. It soon became evident, however, that he had a serious misconception of his duties, and thought the only important thing was to secure his railroad transportation to the place of meeting. We therefore were forced to help arrange for the meeting that year, and ever since have been kept in office against our personal inclination. So soon as we find one who is willing to serve the National Association unselfishly and with ability, for much self-sacrifice is required, we shall be only too glad to relinquish our duties to him.

The last part of the editorial is the only thing which gives us any great concern, and we confess to being much depressed over the severe criticism which may be in store for us. No doubt the other members of the executive committee are alike terrorized, and for fear that the whole body may become so demoralized as not to be competent to properly perform their duties, we would entreat the self-appointed censor of the dental profession to draw it mild.

GEORGE B. RICHMOND, a dentist, who died at Lansing, Mich., Aug. 8, aged 49 years, was the original inventor of the electric telephone which was in use before the Bell patent was filed.

## Book Reviews.

**ORAL PATHOLOGY AND PRACTICE.** A text-book for the use of students in dental colleges, and a hand-book for dental practitioners, by W. C. Barrett, M.D., D.D.S., M.D.S., Professor of Oral Pathology in the University of Buffalo, Medical Department. Published by the S. S. White Dental Mfg. Co., 1898.

The author is eminently qualified for such a work, as he has for many years been a contributor to our literature and has been a teacher nearly all his life.

While it is written from the standpoint of a teacher, and is therefore especially adapted for the needs of students, it will be found a valuable manual of treatment for those who have been long in practice, since it adds much to the field of the dentist that has been too often relegated to the general physician.

The book is exclusively devoted to one subject, it attempts nothing save the consideration of the treatment of oral diseases with their pathology. It is made as concise as possible, and the author has defined his aim in the preface. He believes there has been too much of an attempt to cover the whole of dentistry in one volume, and thinks it is time to teach different branches separately and to have distinct and individualized text-books. The language used is clear and concise, and the whole system of practice taught is consistent and modern. The author has not blindly accepted the assertions of any one, and has not hesitated to call in question and differ with much accepted practice. Having no long quotations from other authors the size of the book has been kept within moderate compass.

A complete and comprehensive index places all the topics at immediate command. The price is moderate, and we would urge all our readers to secure a copy of the same.

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## Notices.

### NEBRASKA STATE DENTAL SOCIETY.

The officers for the ensuing year were elected as follows: President, T. J. Hatfield, of York; Vice President, C. R. Teft, of Lincoln; Secretary, George S. Nason, of Omaha; Corresponding Secretary, B. F. Fisher, of Omaha; Treasurer, H. J. Cole, of Norfolk.

## ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the Illinois State Board of Dental Examiners will be held in the rooms of the Chicago Business College, 67 Washington street, Sept. 27, 1898.

J. H. SMYSER, Sec'y.

## NORTHERN ILLINOIS DENTAL SOCIETY.

The Northern Illinois Dental Society will hold its annual meeting in Rockford, Oct. 19-20, 1898. A good program has been prepared and the profession are cordially invited to be present.

JAMES W. CORMANY, Sec'y.

## SOUTHERN CALIFORNIA DENTAL ASSOCIATION.

At the first annual meeting of the Southern California Dental Association, held at San Diego, Sept. 1 and 2, 1898, the following officers were elected: W. A. Smith, President; H. R. Harbison, Vice-President; C. W. Sylvester, 2d Vice-President; L. E. Ford, Secretary; J. M. White, Treasurer. The next meeting will be held at Los Angeles in March, 1899.

## NORTHEASTERN DENTAL ASSOCIATION.

The fourth annual meeting of the Northeastern Dental Association will be held in Hartford, Conn., October 19-20, 1898. The meeting promises to be one of unusual interest. The executive committee have made extensive arrangements for a fine exhibit of dental goods, and the clinics and papers will be worthy of attention. We confidently expect a large gathering.

E. O. KINSMAN, Sec'y.

## MINNESOTA STATE DENTAL ASSOCIATION.

The fifteenth annual meeting of the Minnesota State Dental Association was held in St. Paul, Sept. 6-8, 1898. The following officers were elected for the ensuing year: President, L. P. Leonard, Waseca; Vice-President, G. S. Munson, St. Paul; Secretary, H. L. Cruttenden, Northfield; Treasurer, H. M. Reid, Minneapolis; Chairman of Executive Committee, G. H. Goodrich, St. Paul; Master of Clinics, W. N. Murray, Minneapolis. The next annual meeting will be held at Northfield, subject to the call of the executive committee, which will probably be some time in August.

H. L. CRUTTENDEN, Sec'y.

## NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The officers were elected as follows: President, Dr. D. J. McMillen, Kansas City; Vice-President, Dr. B. Holly Smith, Baltimore; Secretary, Dr. J. H. Kennerly, St. Louis; Treasurer, Dr. Henry W. Morgan, Nashville, Tenn. Drs. Kennerly and Morgan were re-elected by acclamation. Executive Committee, Drs. J. Taft, Cincinnati, Theodore Menges, Chicago, and S. W. Foster, Atlanta. Ad. interim Committee: Drs. James Truman, Philadelphia; W. T. McLean, Cincinnati, and G. V. I. Brown, Milwaukee.

The next meeting will probably be held at Niagara Falls in 1899, the time and place being left to the executive committee.

## NORTHERN INDIANA AND SOUTHWESTERN MICHIGAN SOCIETIES.

The new officers elected at the meeting held at Elkhart, Ind., September 21, 1898; are: Indiana Society, C. G. Keehn, Ligonier, President; T. A. Goodwin, Warsaw, Vice-President; W. O. Vallett, Goshen, Secretary and Treasurer. The next meeting will be held at Warsaw, Ind.

Michigan Society, F. H. Essig, Dowagiac, President; C. B. Hanson, Niles, Vice-President; C. E. Burtsfield, St Joseph, Secretary; A. C. Runyan, South Haven, Treasurer. The next meeting will be held at Cassopolis, Mich., in April, 1899.

COMMITTEE ON THE INTERNATIONAL DENTAL CONGRESS  
APPOINTED AT THE RECENT MEETING OF THE  
NATIONAL DENTAL ASSOCIATION.

A. W. Harlan, Chicago; A. H. Fuller, St. Louis; H. J. McKellops, St. Louis; J. Taft, Cincinnati, H. A. Smith, Cincinnati; W. W. Walker, New York; James McManus, Hartford; W. C. Barrett, Buffalo; T. W. Brophy, Chicago; B. Holly Smith, Baltimore; Frank Holland, Atlanta; W. E. Griswold, Denver; C. L. Goddard, San Francisco; L. L. Dunbar, San Francisco; H. W. Morgan, Nashville; E. C. Kirk, Philadelphia; J. D. Patterson, Kansas City; Thomas Fillebrown, Boston; T. E. Weeks, Minnesota.

EXECUTIVE COMMITTEE OF THE NATIONAL DENTAL  
ASSOCIATION.

A meeting of the executive committee of the National Dental Association was held at Omaha, Sept. 1st, with the following members present: G. V. I. Brown, C. S. Butler, J. Y. Crawford, J. N. Crouse, M. F. Finley, V. H. Jackson, J. D. Patterson. On motion, J. N. Crouse was elected chairman and C. S. Butler secretary of the committee. The chairman appointed the following divisions: First Division, Committee of Arrangements, J. N. Crouse, G. V. I. Brown and C. S. Butler; Second Division, Credentials and Auditing, M. F. Finley, V. H. Jackson and J. D. Patterson; Third Division, Committee on Voluntary Essays, J. Y. Crawford, L. G. Noel and H. A. Smith.

C. S. BUTLER, Sec'y.

NATIONAL DENTAL ASSOCIATION.

The following officers were elected at the recent meeting of the National Dental Association at Omaha: President, F. J. Burkhart, Batavia, N. Y.; Vice President from the East, S. H. Guilford, Philadelphia; Vice President from the West, Thos. E. Weeks, Minneapolis; Vice President from the South, B. Holly Smith, Baltimore; Cor. Sec'y, Emma Eames Chase, St. Louis; Rec. Sec'y, George H. Cushing, Chicago; Ass't Rec. Sec'y, W. E. Walker, Pass Christian, Miss.; Treasurer, H. W. Morgan, Nashville. On the Executive Committee, G. V. I. Brown, Milwaukee; C. S. Butler, Buffalo, N. Y.; J. Y. Crawford, Nashville. Publication Committee, C. N. Johnson, Chicago; C. N. Peirce, Philadelphia. Local Committee of Arrangements, C. S. Butler, Buffalo; D. F. Bentley and M. O. Cooley, Niagara Falls. Next meeting at Niagara Falls, N. Y., first Tuesday in August, 1899.

W. E. WALKER, Ass't Rec. Sec'y.

## LATEST DENTAL PATENTS.

- 29,219. Toothbrush, design, Julia F. Ufford, Boston, Mass.  
 609,639. Electro-medical apparatus, Reinhold H. Wappler, New York.  
 609,843. Sprayer, De Wane B. Smith, Deerfield, N. Y.  
 609,875. Electrode for medical purposes, Marian N. Clarke, Wilkes-Barre, Pa.  
 609,923. Inhaler, George H. Tuttle, assignor of one-third to F. H. Willard, Cambridge, Mass.  
 609,982. Hypodermic syringe, Benjamin T. Winchester, Baltimore, Md.  
 610,214. Dental engine, John D. Wilkins, assignor to J. N. Crouse, Chicago.  
 610,483. Tooth-holder for dental handpieces, Charles P. Fritz, assignor to W. M. Speakman, Philadelphia, Pa.

## TRADE-MARKS.

- 31,936. Soaps, perfumery, extracts, and face and tooth powders, excluding perfumed waters, Court Perfumery Company, New York City.  
 31,950. Disinfecting, antiseptic, and asepticizing preparations, firm of Carl Raspe, Weissensee, Germany.

(List furnished by John A. Saul, patent attorney, Washington, D. C.)

## PEACE JUBILEE CELEBRATION.

On October 18 and 19, 1898, the citizens of Chicago expect to celebrate the declaration of peace which ends the long strife between our country and Spain, a strife which has caused the loss of life and health of many of our brave countrymen.

To raise the required funds for these festivities, a committee was appointed to solicit donations among dentists in the same manner in which other professions were being canvassed. It is so seldom that professional men are asked to assist financially in any patriotic celebration, that the finance committee of the National Peace Celebration are justified in expecting the hearty support of the professions.

We understand that the legal and medical professions are offering excellent financial support, and as in a matter of this kind the public is apt to judge the profession as a whole, instead of its individual members, it is hoped by the dentists' subcommittee that their fellow-practitioners in this city will contribute to the full extent of their ability.

The object of the committee is primarily, of course, to raise funds for the noble cause, but we wish also to place our procession at the head of the list if possible. A good share of the money collected will be distributed among the poor families of some of our soldiers, and we would urge that every dentist give something.

The checks should be made out to E. G. Keith and directed to H. H. Schuhmann, Columbus Memorial Bldg. Kindly send them in at once, as an additional list of subscribers is to be published in a few days.

T. W. BROPHY,	} Committee.
C. N. JOHNSON,	
C. P. PRUYN,	
H. H. SCHUHMAN,	
E. D. SWAIN,	

## News Summary.

"PERSONAL, PUBLIC INTERESTS."—Will some one interpret this for us?

**NEW DENTAL COLLEGE IN DES MOINES.**—The Des Moines College of Dental Surgery has filed articles of incorporation. G. W. Miller, R. A. Patchen and C. A. Bishop are the incorporators.—*Des Moines Capital*, Sept. 12, 1898.

**NEW DENTAL COLLEGE IN CHICAGO.**—The following was licensed to incorporate Sept. 19: Von Folde College of Dental Surgery, Chicago; capital, \$15,000; to teach dentistry. Incorporators, A. W. Feltman, J. Henry Feltman, John S. Taylor and Herman Meyer.

**TRAVELING DENTIST SUED.**—Samuel Bowman, of Clarks Mills, Pa., has caused the arrest of C. B. Garvis, a traveling dentist, in answer to a \$5,000 damage suit for breaking his jawbone while extracting a tooth. It is said the dentist has no diploma.—*Meadville (Pa.) Republican*, Sept. 8, 1898.

**MISSOURI'S NEW DENTAL LAW UPHELD.**—A dentist at Warrington was convicted of violating the law by practicing without a license and was fined \$50. The case was a test one, non-certificate-holding dentists combining to fight it. Four similar cases are pending in other parts of the state.—*Kansas City Medical Index*, July, 1898.

**WILLS TEETH TO A CHURCH.**—George A. Ward, of Rochester, Ind., who died some time ago, left a will with the provision that his teeth, which had been worn for a number of years, should go to the Congregational Church. The gold around the teeth was accordingly sold, bringing \$27.00, and same was applied on the pastor's salary.—*Chicago Record*.

**DR. JAMES S. GILLIAMS** died of pneumonia Sept. 9, 1898. He graduated from the Pennsylvania College of Dental Surgery in 1863, and had practiced in this city since that time. He was the son of the late Dr. Jacob Gilliams, one of the founders of the Academy of Natural Sciences and a prominent citizen of Philadelphia.—*Philadelphia Ledger*, Sept. 12, 1898.

**COCAIN AND GAS TOO MUCH.**—A woman recently went to a dental parlor in Cincinnati to have some teeth extracted and gas was administered. After several teeth had been extracted she partly revived, but suddenly fell back and instantly expired. At the inquest her daughter stated that her mother had frequently applied cocain to the gums and teeth to relieve the pain, and that she had done so just before going to the dentist. The coroner therefore exonerated him.

**WESTERN DENTAL COLLEGE SUED.**—D. L. Doering has sued the Western Dental College for \$2,500, because it refuses to issue him a certificate of examination. There are three terms in the course and the second one was taken at another college. The Western refused to recognize the other college term and will credit him with only two. He tried to compel the college to issue a certificate by writ of mandamus, but failed.—*Kansas City Star*, Sept. 10, 1898.



**TO REMOVE TAR FROM GLASS.**—Make a paste the consistency of cream of pulverized aniseed and extract of licorice. Rub it over the tar thoroughly with the hand, wash with soap and water and dry with a soft rag.

**AN INFLUENZA BABY.**—While the influenza was at its height in New York some time ago, in a family where all were suffering with the disease a boy baby was born, and by unanimous consent was named Agrippa.—*American Hebrew*.

**CAUSES OF DEATH.**—According to an English weekly journal it is estimated by a competent foreign authority that only 900 persons out of every 1,000,000 die from old age, while 1,200 succumb to gout, 18,400 to measles, 2,700 to apoplexy, 7,000 to erysipelas, 7,500 to consumption, 48,000 to scarlet fever, 25,000 to whooping-cough, 30,000 to typhoid and typhus, and 7,000 to rheumatism. The averages vary according to locality, but these are considered accurate as regards the population of the globe as a whole.

**FROM EXPERIMENTS ON RABBITS,** Dr. T. Oliver concludes that risk of death from asphyxia after inhaling a mixture of air and acetylen is not so great as from a similar mixture of air and coal-gas. The time taken to produce toxic effects is longer in the case of acetylen, and the symptoms are free from the nervous or respiratory excitement seen with other narcotic vapors. Provided asphyxia has not gone too far, recovery is rapid after exposure to fresh air. The subject is receiving further investigation.

**CELLULOID BANDAGES.**—Celluloid has been suggested as a substitute for plaster of paris, its weight being less than one-fourth. It is readily cleaned, has a smooth surface, and is impervious to urine and discharges. Cut into small pieces, celluloid is dissolved in acetone. This solution is rubbed into each layer of gauze bandage or jacket, a kid glove being worn to avoid the celluloid drying on the skin. Ten layers are necessary. Three or four hours are required in drying. Small holes may be punctured for ventilation.

**DENTAL SOCIETY CIRCUMVENTS SHARPER.**—During the first week in September a young man giving his name as H. W. Willard called at almost every dental office in the city, had his teeth examined, and made a date to have work done. At a meeting of the city dental society the matter came out, and after comparing notes the dentists reported the matter to the police. The man disappeared however without fulfilling any of the engagements he made. He observed everything about the offices closely, and it is thought was planning to rob them.—*Evansville (Ind.) News*.

**HOW HIGH IS YOUR CHAIR?**—Some curious experiments have been made by a Harvard professor to prove what is really the best height for the chair you sit on and the desk you write at. Every person, it appears, ought to have a chair specially made to suit his or her height, and the seat of the chair should be exactly one-quarter of your height from the floor. Thus, if you are six feet high the chair seat should be eighteen inches. The width of the seat should exactly equal its height, and it should slope backward three-quarters of an inch to the foot. The back should be a trifle higher than the seat and sloped slightly, not too much. Finally, your desk should be two-

thirds as high again as the seat of your chair. Thus, if your chair-seat is twenty-four inches, the desk should be forty inches in height. When you have attended to all these little details you can sit and write all day without feeling that backache which comes from chairs and desks that don't fit you  
—*Boston Traveler*.

**TOOTHACHE DROPS BRING DEATH.**—Creosote applied to relieve a toothache was accidentally swallowed by Mrs. Alice Mee, 165 Huron street, yesterday morning, and a few hours later she died at the county hospital. Mrs. Mee was discovered unconscious by her husband soon after swallowing the poison.  
—*Chicago Record, Aug. 3.*

A STUDENT recently asked the president of Oberlin College if he could not take a shorter course than that prescribed by the institution. "Oh, yes," was the reply; "but that depends upon what you want to make of yourself. When God wants to make an oak he takes 600 years, but when he wants to make a squash he takes six months."

**INTRANASAL SYNECHIA** is very apt to follow galvanocauterization, but is can be entirely prevented by cauterizing with a few crystals of chromic acid melted on the tip of the probe. The scars thus produced act as insulators, and the process is but slightly painful, much to be preferred to the metal plate and celluloid plates recommended for the purpose.—*Jour. des Soc. Med. de Lille, June 18.*

"**INFORMATION**" for patient and dentist, a monthly magazine devoted to dental and oral hygiene, and general information regarding noteworthy things throughout the world. The object of this new magazine, which will be issued next month, is to instruct patients and the public regarding oral hygiene and dentistry, and to convey useful information to the dentist.

It is designed for the reception-room table where waiting patients can pick it up and in a few minutes obtain valuable information.

In each issue there will appear articles on some phase of oral hygiene or dentistry, prepared specially for the instruction of patients by the most prominent men in the dental profession.

A department for boys and girls will contain instructive articles on hygiene, about the teeth, etc., written in a simplified style (perhaps in story form) and designed to be read to children in the school or home.

Then, here and there will be a brief suggestion regarding oral hygiene, dentistry, etc., for patients, and an original short story by some prominent author will be published in each issue.

The remainder of the magazine will be filled with short articles of interesting and instructive information regarding things in general throughout the world. This miscellaneous arrangement, while leaving the special dental articles the most prominent, will attract the reader's attention and interest him. This will not only be a valuable magazine for patients, but the dentist will find much in it to interest and instruct him.

Every dentist will be benefited by subscribing for this magazine, the price of which is \$1.00. If you subscribe before October 20 you get it at a special rate of 75 cents. Dr. L. P. Bethel, Kent, Ohio, is editor and publisher.

# PRESCRIBE LISTERINE

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**LISTERINE** is used in various degrees of dilution. One to two ounces of **LISTERINE** to a pint of water will be found sufficiently powerful for the general care of the deciduous teeth of children, whilst a solution composed of one part **LISTERINE** and three parts water will be found of agreeable and thoroughly efficient strength for employment upon the brush and as a daily wash for free use in the oral cavity, in the care and preservation of the permanent teeth.

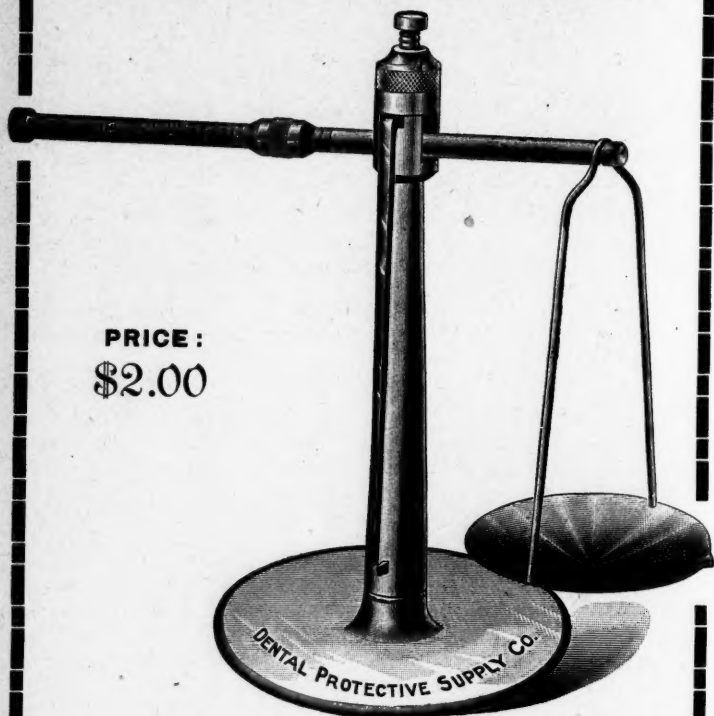
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The arrangement of the pan makes the scale absolutely accurate, and the capacity is  $\frac{1}{2}$  to 24 grains. It is handsomely nickel-plated and very simple in construction.

## Dental Protective Supply Co.

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